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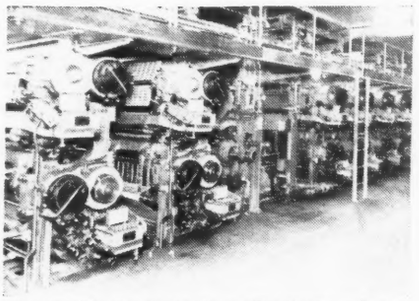

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• • •

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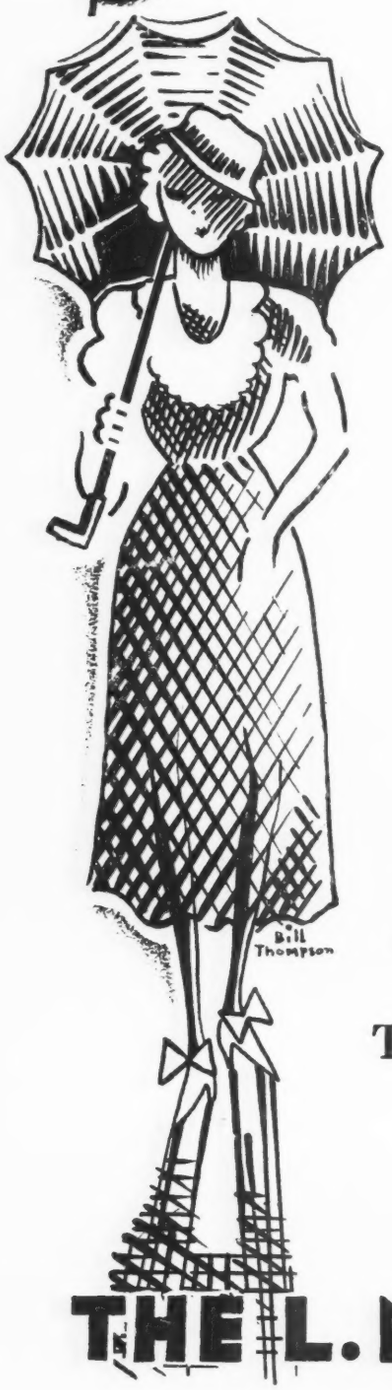
Set in Ludlow Karnak Light

December, 1932

Show thru!



"Beauty hath its charms."

But there's no beauty in this show through.

Neither can you print a beautiful newspaper with an ink that shows through.

Many newspaper publishers and pressmen have eliminated show thru by using Columbian inks.

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PRINTING EQUIPMENT ENGINEER

TRADE MARK REGISTERED U. S. PATENT OFFICE. ESTABLISHED 1910

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DECEMBER, 1932
NUMBER 3

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In This Issue:

Suggests Corporate Body Rule on Used Machinery 7
Joseph T. Mackey

Photo Lithography and Offset Lithography - 8
Frank O. Sullivan

Do You Understand Your Rollers? - - - - 9
E. Byron Davis

Controlled Heat for Burning-in Engravers' Plates - - - - - - - - - 10
W. Roy Manny

Monotype Rule and Dry Mat - - - - - 11
Jack Gill

Controlled Maintenance Schedule for Line-casting Machines - - - - - - - - 12
Leon A. Link

Monotype Company Has Option on Directoplate 18

Meeting of Illinois Newspaper Executives - - 18

November Printing Patents - - - - - - 20

Latest Printing Equipment Mechanisms - - 22

Catalogs, Books and Bulletins - - - - - 30

Let others also read *The Engineer*

After you have read this copy, pass this magazine along to the other men in your organization. They will undoubtedly get helpful ideas from its pages.

Check in left column after reading. Note articles of interest.

☐ *Composing Room Superintendent*

☐ *Superintendent Press Room*

☐ *Chief Composing Room Machinist*

☐ *Superintendent Stereotype Foundry*

☐ *Monotype Department*

☐ *Photo Engraving Department*

☐ *Superintendent Electrotype Department*

☐ *Foreman Lithographing Department*

☐ *Bindery Foreman*

☐ *Production Manager*

☐ *Mechanical Superintendent*

☐ *Manager*

☐ *Purchasing Agent*

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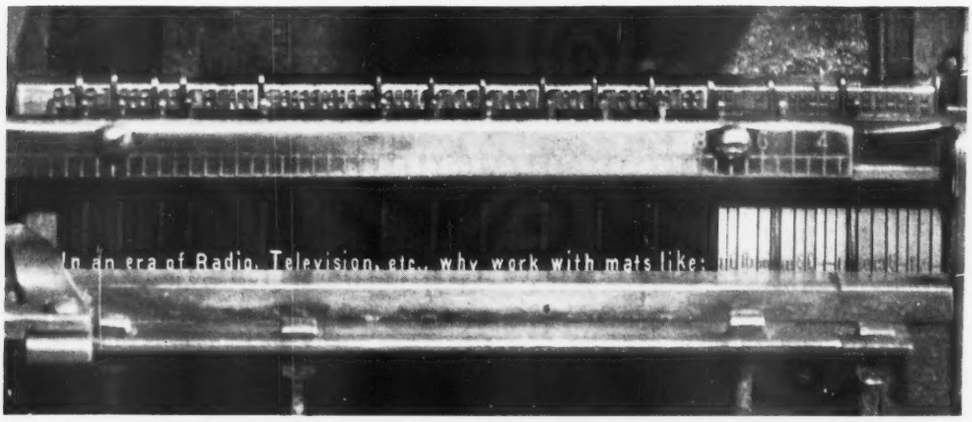
No. 5 of a Series of Advertisements Pointing the Way to Lower Composing Room Costs



A Process Applied to Your Present Matrices Making Them Visible — Note the Contrast

94 Lines of Each 100 Lines Set Are Free of Errors

Yet 27.82 per cent of composing room's time is spent in detecting, resetting, and rehandling the 6 lines containing errors

A national survey shows 98 lines of 100 in the complete newspaper are composed on linecasting machines; less than 2% is set by floor men.

The accompanying chart shows the division of a typical newspaper composing room force — based on a nation-wide survey.

It proves that were there no errors in composition, the following members of the force would not be needed:

Proofreaders	10.86%
*Machine Operators	4.83%
**Floor Men — Ad Room	8.29%
½ Bank and Correction Bank Men	3.84%
	27.82%

*Operators non-productive 12% of time because of errors in news and ads. No allowance for store changes in advertising.

**Floor Men — Ad Room non-productive ⅓ of time correcting office and store proofs.

A national survey of proofs of composition shows more than half of errors made are not a matter of education, but are transpositions, missing letter, double letters, wrong letters, etc., errors any operator recognizes at a glance with Black and White Matrices.

With the use of Black and White Matrices we guarantee to reduce all errors in original composition at least 25%. The cost of this service is less than 10% of what you pay proofreaders to detect errors in proofs.

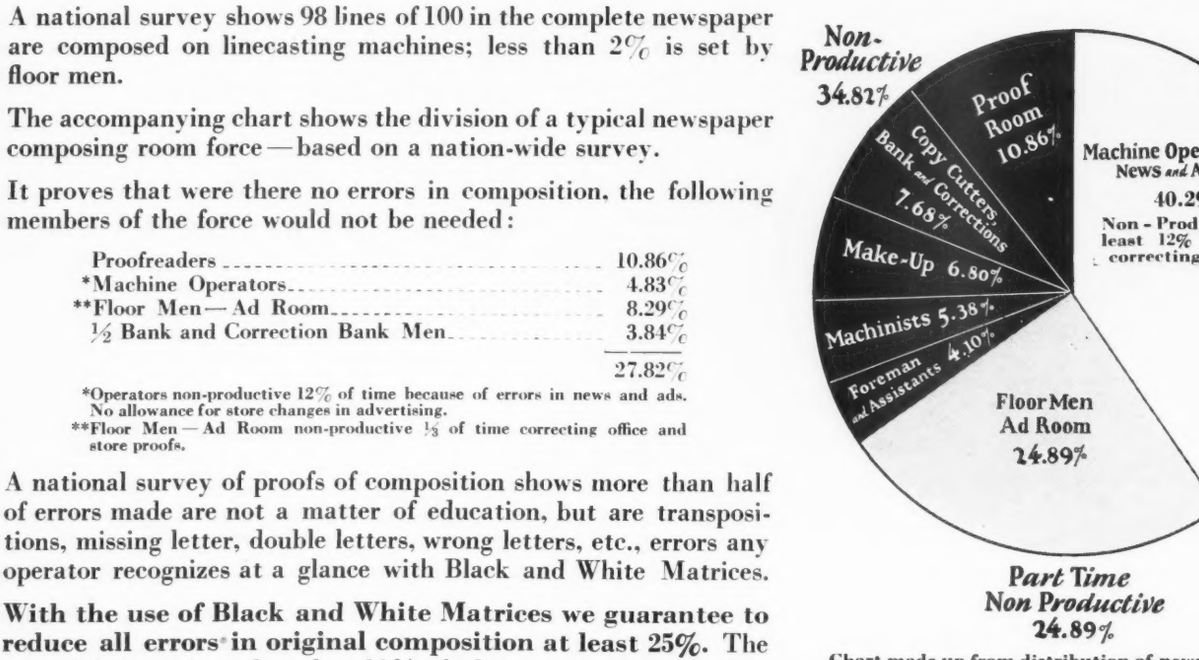

Non-Productive 34.82%
Productive 40.29%
Proof Room 10.86%
Copy Cutters, Bank and Corrections 7.68%
Make-Up 6.80%
Machinists 5.38%
Foreman and Assistants 4.10%
Machine Operators News and Ads. 40.29%
Non-Productive at least 12% of time correcting proofs.
Floor Men Ad Room 24.89%
Part Time Non Productive 24.89%

Chart made up from distribution of newspaper forces representing 10% of membership of International Typographical Union in the United States.

Matrix Contrast Corporation

(Sole Licensees of the Perry L. Hill Black and White Patents No. 1466437, held valid by U. S. District Court, Eastern District of New York. Infringers will be vigorously prosecuted.)

4005 Empire State Building . . . New York

PRINTING
EQUIPMENT
ENGINEER
December, 1932

Suggests Corporate Body Rule on Used Machinery

By JOSEPH T. MACKEY*

Mr. Mackey Proposes Plan and Procedure for Association Composed of Printers to Deal with Second-Hand Machinery Problem in the Printing Industry

IF BUSINESS is to recover and progress, a profit must be made on whatever volume is obtainable. You cannot sell at cost or less-than-cost to make progress. You must sell your product based on *known costs* plus a reasonable return on your investment if you are to go forward. I myself do not see how any progress can be made in the present situation until the principle is recognized that costs, irrespective of the conditions, shall be the basis on which selling prices shall be made.

There is no doubt that the fallacy of hoping and waiting for a return of normal conditions instead of meeting courageously the situation whereof I speak is as big a factor in the prolongation of the present-day situation as any other.

But the difficulty in any of these things is undoubtedly a lack of the proper *get-together* spirit on the part of competition. Therein lies the value of organizations such as your own which, meeting under happy conditions and with proper support from their members, can be more effectively in aiding you to meet your problems than you could, acting as separate units and individuals.

Now let me give you another thought. For some years past, resolutions have been adopted by printing organizations condemning the extravagant terms on which printing machinery is sold and suggesting that sales should be limited to down-payments of 25 per cent of the sales price and about two years' credit for the balance. I think I could allay your fears considerably as to the position of at least one company in this regard.

Printing machinery manufacturers in general try to sell their machines for cash. Failing that they try to obtain sound cash payments and the shortest possible time for payment of the balance of the purchase price.

THE MACKEY PLAN

Today the market is glutted with machinery, much of which is inefficient or obsolete. There is thus the danger that the industry may re-equip itself for years to come with machinery which can only perpetuate an unsatisfactory product with emphasis only on low prices for the printer's product.

I do not believe this problem is unsolvable. Talk will not cure it, however. Definite and planned action is required. It is not a task for the Printing Machinery Manufacturers alone. The industry should act.

I wonder if such a plan as this would work:

Let a corporate body come into being from the ranks of the industry.

Let funds be subscribed by the industry at large and used for the purpose of keeping the market clear of second-hand machinery.

Let such of the machinery as is found to be inefficient and obsolete be scrapped.

Let such of the machinery as is found to be capable of salvage be sent to the manufacturer to be restored to first-class condition for re-sale.

Let the price of these reconditioned machines approach within reason the list price of similar new machines.

Let arrangements be made with the manufacturer to sell the reconditioned machines for the account of the corporate body with proper allowance for sales and handling expense, the net proceeds to return to the corporate funds.

This is but a hazy outline of thought which runs through my mind. I have, however, no doubt but that a proper working plan along some such lines is needed to deal effectively with this problem.

And then the industry must learn to forget the temptation of exacting excessive allowances for old machines in trade. Any machine, the purchase price of which has been recaptured as the result of treating depreciation as a cost element, should, when the time for replacement arrives, go to the scrap heap where it belongs and not be allowed to come back into the market.

Where credit is to be extended, standard terms of payment are part of their business programs and it is safe to say that where there is a departure from those standard terms of payment it may be charged to the insistent demands on the part of the trade in pitting competitors against each other not only on price but on terms and allowances for old machines.

In this matter of terms, I think you need have no fear as to lack of cooperation on the part of the outstanding com-

*Executive Vice President, Mergenthaler Linotype Co., Brooklyn, New York. Abstract of Address delivered at the Fall Festival Meeting of the Brooklyn Group of the New York Employing Printers' Association, Brooklyn, N. Y., November 15, 1932.

panies manufacturing printing machinery whom I prefer to classify as the Standard Bearers of the Industry.

I may say that the object sought by such proposals is not sufficient to accomplish the desired end. To my mind the real question is not whether there are too many printers, but that there are too many suppliers.

The entire domestic field to be covered by suppliers consists of about 2000 daily newspapers, probably 13,000 weeklies, 5000 tri-weekly and monthly papers, about 12,000 to 15,000 book and job plants including privately-owned and machine composition plants.

So far as the printing and publishing part of the industry is concerned it has a more general field for basis of operation.

No one, of course, can properly object to intelligent and constructive competition. We have always held to this view. Unfortunately there exists too much of the unintelligent type of competition.

The standard bearers of the industry have never been found wanting in any emergency. They deserve your support. Then, too, you are confronted with the second-hand market. It practically has the printing machinery business at a standstill. As a result of consolidations or sales of printing and publishing businesses, of which there have been a great many in the last five years, there are perhaps as many second-hand machines on the market today as a year's demand in normal times would require of manufacturers.

This situation has created a real problem and the solution of it is not a simple matter. It is a condition which requires serious thought and unity of action, both on the part of the printer and publisher and the supplier. Indeed, no problem confronting the industry today is more serious than second-hand machinery. It strikes at the very heart of your business and unless it is overcome, threatens to undermine the constructive work of many years.

Photo Lithography and Offset Lithography

A Method of Reproducing Type and Halftones Without Photography

By Frank O. Sullivan

There are so many modifications of the Direct or Glue Solution (and most of them have merit) that it is rather difficult to note wherein they differ, or which one is the most adaptable to a general use. One of these investigations brought to light a method now in use, to the exclusion of all other methods, in the offset department of the Methodist Book Concern, of Cincinnati, Ohio. This process was worked out by the men in that department (none of whom were practical lithographers) after they had tried out many of the regulation methods of procedure. It is simple, accurate and speedy.

Some five or six years ago, the late Paul C. Thomssen, then superintendent of the plant, conceived the idea of installing an offset lithograph department. He installed one web offset press, and one sheet fed offset press. The plant was put in charge of W. E. Garrison (who, after Mr. Thomssen's death, became superintendent), Wm. Schaeffler and Geo. E. Knell. Every one of these men were trained printers, with practically no knowledge of lithography, but they set to with a firm determination to master this new method of printing. How well they succeeded is amply evidenced by the fine character of work they are now turning out on their offset presses. Much of the work is in black and white, but they are also capable of turning out color work as well. W. E. Knell, who previously had charge of the electrotype department, is now in charge of the photo-mechanical department of the offset division, while William Schaeffler is foreman of the department. It is a pleasure to pay tribute to the perseverance of these men in the face of all their difficulties, and to give them all due credit for the masterful way in which they surmounted all obstacles. Of their own volition they worked out a process of their own—a modification of the Direct or Glue process—and worked it out to a satisfactory conclusion.

The method is simple and can easily be handled in any lithographing or printing plant, where offset presses and photo-mechanical equipment are in use. Both type and halftones are being reproduced accurately by this process. The type is set, with the halftone or halftones inserted in the form. It is then locked up and levelled off with the ordinary printer's mallet and block. No make-ready is necessary.

> This process is a valuable contribution to the industry, and was given to Mr. Sullivan through the courtesy of the members of the Methodist Book Concern, who, like all good Craftsmen "share their knowledge." If there are any questions the readers of Printing Equipment Engineer would like to ask Mr. Sullivan on this, or any other subject on offset lithography, a letter addressed to him in care of this publication, will be given prompt attention.—*Editor.*

Some of Fredericksen's Etching Ink is then placed on an ink slab, and worked up with the ink spatula; the ink roller is then thoroughly rolled up with this ink, and then rolled over the type and halftone form, which has been locked on the bed of the offset proofing press. After being thoroughly inked up, the offset blanket cylinder is rolled over the form, and the type and halftone impression is transferred to the rubber blanket. This operation is repeated six times, the

Continued on page 30

Do You Understand Your Rollers?

By E. Byron Davis*

The Roller-Maker, as Well as the Pressman, Has His Problems. As the Mechanics of Printing Progress, the Roller-Making Art Will Also Progress.

How can I get more usable life out of my rollers? Am I using the correct roller for my particular press and kind of work? Are my rollers causing trouble that I blame on other supplies that are used in my plant?

These are but a few of the important questions every printer is asking himself today.

New discoveries are made every day that remove some of the mysteries of printing and lighten the burden of trouble. There are old discoveries that through age have been forgotten or through negligence are not now in practice, which should be put back in use. If printers are to progress and deliver the quality and uniformity of work demanded today, both old and new discoveries must be used whenever possible. Moreover this step would assist the printer to a profit. Too often "penny-wise pound-foolish" is driving printers bankrupt daily. We all get just what we pay for.

As one of the five major classifications of items that enter into printing, rollers are today a source of many of these discoveries. This space will be devoted to a few of the more important. Furthermore, due to the numerous ramifications of the printing industry, only the letter-press problems will be considered here.

We all have heard the proverb that a chain is as strong as its weakest link. This is also true of printing. Consider again the five major items that compose printing—first, the press; second, the plates (including makeready); third, the paper; fourth, the ink, and fifth, the rollers. No attempt is made to list them in the order of their importance since all are vital to the art. Any four may be of the proper quality for any job but should the fifth be unsuited, the printed result can be no better than the working qualities of the poor item will permit.

Presses with worn bearers, improper travel or warped and imperfect beds or cylinders will reflect accordingly. Poorly calendered paper or stock unsuited for the screen to be printed will give no end of trouble. Plates with mashed dots and rules, over-treated, uneven or careless makeready will not produce the desired results even though the other factors are correct. Inks, not suited to the paper, too much or too little tack or dryer, weak color strength, too short or too long, will have their effects. Rollers having too much or too little tack, being too hard or too soft or otherwise inadequate will leave their blemish.

Being so intertwined in operation and coming from numerous sources of supply one can readily see how easy it is to blame one or the other of these items unjustly when trouble is encountered. It has often been stated that the correct way to print probably is with a perfectly operating press, proper quality of paper, ink, rollers and true, accurate plates. All these being such, a light impression both as to ink distribution and printing pressure will assure correct and beautiful results. This is all true and can be proved when time is not limited and the run is short. Unfortunately, this Utopia does not exist in actual production where quantities of supplies from different sources are used, nor when the human element and natural wear must be considered. True, we are nearer it today than ever before but its actuality is no doubt many years off, if indeed we shall ever realize it.

Why is there a demand in some plants for a soft, mushy roller? Most every printer can answer that one—to ink up the low spots or dots in a form that may be particularly uneven. This form also requires abnormal printing pressure

Continued on page 26

EDITOR'S NOTE:

In this article, Mr. Davis discusses the five major pressroom elements which contribute to the making of good printing—the press, the plates (including makeready), the paper, the ink and the rollers. Many times the pressman blames the rollers for printing difficulties when the fault lies in his own craftsmanship. Many roller manufacturing companies maintain development and experimental laboratories so that with proper cooperation from the printer the roller-making art may progress. All printers should remember that the success of any material given to them to work with will be successful only when the pressman applies his knowledge to the manipulation of that material.

MANY THANKS, MR. MUTCHLER

Easton, Pa., Nov. 12, 1932.

Printing Equipment Engineer,
Cleveland, Ohio.

Gentlemen:

I have read various articles in your publication and have received some very good information therefrom. I believe that this publication is entering a field that has unlimited possibilities.

Yours very truly,
MACK PRINTING COMPANY
Grover C. Mutchler,
Superintendent, Pressroom.

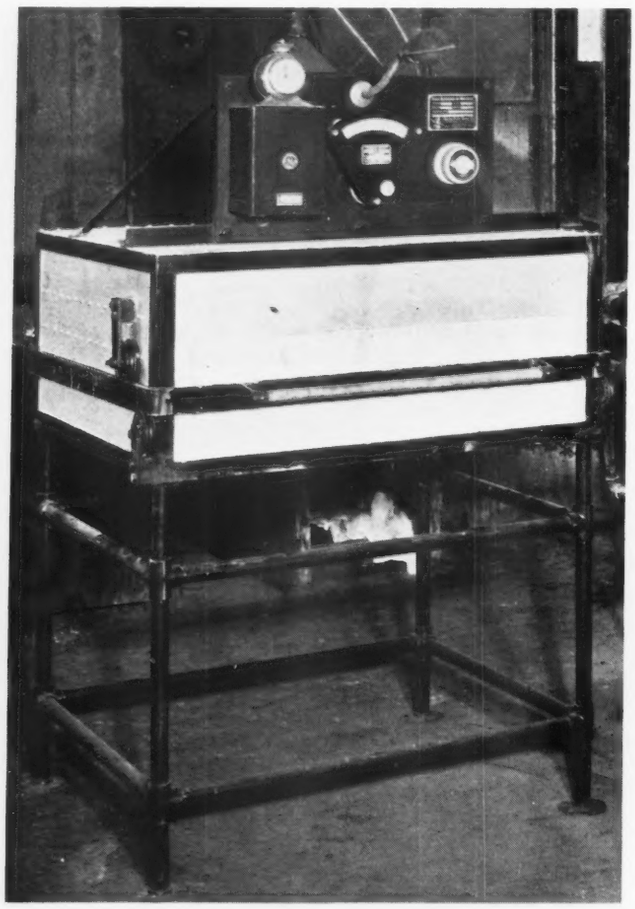
*Secretary, Ideal Roller & Manufacturing Co., Inc., Chicago, Ill.

Controlled Heat for Burning-In Engravers' Plates

By W. Roy Manny*

The zinc half-tone and line engravings used in newspapers take severe punishment in the process of engraving and stereotyping before they are thrown into the scrap box. If glue or "hot-top" enamel is used for the resist, some 600 deg. F. is necessary at the upper printing surface of the plate to set it. Then follow from eight to sixteen successive heatings and coolings of the plate to set the dragons blood powder during the process of etching. A minimum of 300 deg. is required for each burning-in to set the dragons blood.

Zinc is a metal unusually sensitive to heat variations at low temperature. Recrystallization harmful to the temper of the plate can be produced by holding it at as low a temperature as 250 deg. for an hour. Even a few seconds at 600 deg. will



take out some of the strength so necessary to withstand the heavy pressure applied in making stereotype mats.

Conforming to methods as generally employed at the present time, the heat is usually applied to the *under side* of the plate. Naturally, while this heat is being conveyed through the plate to do its job on the upper surface, the lower surface will reach a temperature 100 deg. or more above that of the etched side.

Considering these conditions, it is not surprising that zinc etchings and the engraving department in general have received a lot of unkind criticism.

Students of the photo-engraving process have recognized this weakness in the generally accepted practice of heating, and considerable has been written on the subject. Habit, and the fact that from the angle of the equipment manufacturer there is a limited market for proper equipment to handle this job scientifically, are the main reasons why the present methods of heating still exist, even in well-equipped modern plants.

Obviously, if the plate is heated from the top, or printing side, the heat will reach the dragons blood, or resist used for the print, before it reaches the metal itself. It is impossible to measure accurately the temperature in the middle of a zinc sheet only 0.063 in. thick, but it is estimated by engineers that in producing the same heating effect on the printing side of the plate by heating from above, the temperature in the center of the plate will be from 100 deg. to 200 deg. less than when the same result is produced by heating from below. This difference in temperature is sufficient to make a marked difference in the texture of the zinc in the finished engraving.

The many advantages of the accurate and senstive heat control obtained through electricity has already been generally recognized and successfully applied in the heating of linotype and stereotype metals.

Electricity combined with positive thermostatic control permits the introduction of a new technique in the burning-in of photo engravings, and assures an etching with a uniform temper and which has not been injured by overheating. This is of great importance to the stereotype department, not only in the greater resistance of the plate against the pressure of the mat, but also in making color plates, because a uniformly-heated set of plates will not show the variation in shrinkage which results from unevenly burned-in plates.

The Ajax Burning-in Machine, now on the market, produces the desired results. The accompanying photograph shows the machine which has a metal case heavily lined with heat-insulating material. A flat bed slide on which the plate is laid, surface up, slides in and out of the furnace chamber on rollers. Heating elements in the top of the furnace chamber supply an evenly distributed, gentle heat directly on the top of the plate as soon as the slide or drawer is closed. This uniform heat which reaches the enamel print, or dragons blood, before it penetrates the metal, causes the desired chemical reaction in a definite period of time and before it has raised the temperature in the metal to an injurious degree.

A pyrometer located in the furnace chamber above the plate slide is connected to a thermometer needle on the temperature dial shown in the middle of the panel board. The temperature in the furnace is regulated by a control lever operated by a button on the temperature dial. This control lever is set at any desired temperature. An automatic switch throws off the current whenever the thermometer needle shows a furnace temperature above that already set on the adjustable control lever, giving positive thermostatic control. Thus, the operator may regulate temperature in the furnace chamber from 300 deg. to 1000 deg. F. Once the control lever is set, the temperature in the furnace remains constant.

The length of time required to burn-in depends on the set furnace temperature and the type of enamel or dragons blood used. The exact time at any temperature for any type of dragons blood or enamel can be determined easily in a few minutes by experiment.

When the time is established, all the etcher has to do is to lay the plate, face up, on the slide and close it. For burning-in a "hot-top" print a dial alarm is set for the required time,

*President, Rolled Plate Metal Company, New York, New York.

leaving the etcher free to do other work until the bell rings when the plate is ready for removal. For the few seconds necessary to set dragons blood, he watches the second hand for the time necessary before removing the plate. Actual practice has shown that, due to the relatively low temperature in the furnace and because the heat is applied to the printing surface, the etcher has a leeway of some seconds in removing the plate without seriously affecting the result. It has been found practical, where high speed production in the etching room is desired, to lower the furnace temperature and hence lengthen the time of burning-in dragons blood sufficiently to allow the etcher time to powder one plate while another is being burned-in.

The uniform temperature throughout the furnace chamber assures even heat over the surface of the plate, on the enamel or dragons blood. Every plate, large or small, comes out absolutely flat. Any number of plates may be placed on the bed at the same time up to the maximum area of 22 in. by 28 in.

The installation of this machine is a simple matter because it is a complete self-contained unit readily connected to the line. Due to the heavy insulation of the furnace chamber and the automatic cut-off, the power consumption is low. Operating 24 hours a day for one month under actual shop conditions an official test showed a total consumption of 782 kilowatt hours.

Due largely to the damage to the texture of the metal when burning-in glue top enamel many engraving plants have changed in recent years to "cold-top" enamel. The old glue-top enamel when used for half-tones allows a manipulation of dot value in developing the print which is not possible on "cold-top." The uniform burning-in heat from the top in the electric furnace will set "hot-top" enamel without injury to the crystal structure or strength of the metal. It is therefore possible with this machine to obtain the recognized artistic advantages of "hot-top" enamel prints, a factor which the art department will appreciate.

When the finished plates reach the stereotype room, the improved temper in the plates means longer life in making a quantity of mats from the zinc cut, and the uniform heat treatment during etching assures register on color work.

Monotype Rule and the Dry Mat

By Jack Gill

Probably one of the most difficult tasks falling to the lot of the Monotype caster man is that of making fine rule faces that will stand up under whatever pressure the stereotyper sees fit to give the dry mat.

The problem is bad enough under ordinary conditions but it becomes more of a problem when material must be made for use in connection with dry mats, not only for the caster man but for all those in care of the variety of casting machines. Naturally the job of making a hair line face or a Baker rule on a two or three-point body is one that might well drive the caster man to distraction.

But it can be done. Recently in a newspaper plant the comparative serenity of the dry mat operation was suddenly interrupted when the stereotype room took on a different make of mat. It is a very good mat, but apparently it has a somewhat harder surface. For a time it brought considerable trouble, especially with the 2 and 3-point rules.

Investigation revealed that the rule was not any too good. It had been made on a Monotype material-making machine with a No. 43 nozzle. The body seemed to be well filled but inside there were air holes here and there and the rule would cave in right over the weld spot. After trying all the adjustments and going through the usual checking up the operators decided to completely break away from the orthodox or what had been orthodox in the plant for some years past.

As a measure of what was thought to be economy it had been the custom to take pump bodies and pistons, and sometimes piston and pump levers that had outlived their usefulness on a machine used exclusively to cast 6 and 12-point rules, dashes, slugs and borders, and move them over to the machine used for 2 and 3-point material.

The theory involved has a wide acceptance. It is reasoned that when a pump body and piston, for instance, loses metal volume for larger material it can still be used for smaller material. To a certain extent it proves itself. On a typecasting machine a pump body that will no longer make satisfactory 24-point wide characters will be found to be all right on 14 and 18 point.

Our system for years has been to use new pumps and parts essential to the making of larger material and gradually use them on smaller and smaller material until completely worn, when they would be discarded or in the case of pumps returned to the factory for re-bushing and piston fitting.

Thus it will be seen that all 2 and 3-point material was made with pumps throwing a reduced metal volume and with pump and piston levers that were in their declining days. We have had good results and we shall probably continue such pumps on 2 and 3-point leads but we have found that much better rule material can be made with all parts right up to standard.

In the recent trouble we fitted the material-making machine with new closure blades and guide plates, new piston and pump lever and a new pump and piston. And strange to say, we also used a No. 4 nozzle.

We are well aware that a No. 4 nozzle is listed as a special nozzle and is recommended for wave line borders. But we are citing actual experience as against text-book recommendations. The rule that was giving most trouble was about a 1-point face cast on the side of

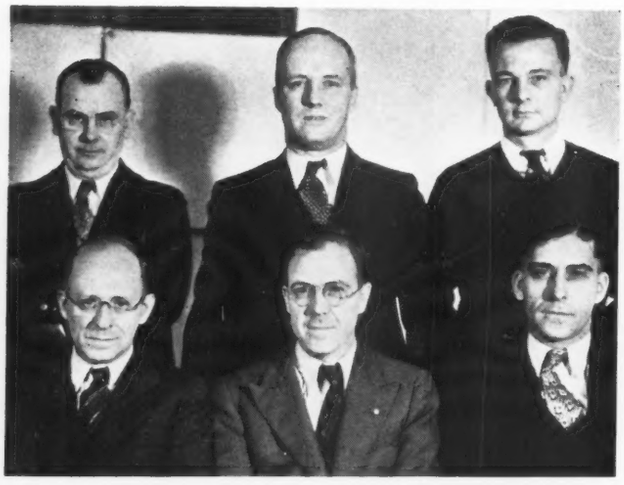
Continued on page 28

Controlled Maintenance Schedule For Line-Casting Machines

By LEON A. LINK*

FOR more than a year we have been operating our typesetting machines in the composing room on the theory that we will eliminate trouble by eliminating the cause of the trouble. In other words, we give the patient some sort of preventive and as a result he is not so apt to get sick. The next step was to determine what the preventive was and to formulate a plan that would make sure that he receive it at regular intervals. The care of the machine must be systematic and the preventive, which we will call "routine upkeep" must be administered at regular intervals if it is going to keep the patient well.

A good nurse keeps a chart and a good machinist should also keep a chart. We have given our charts a lot of study and during the time they were in the process of development many changes were made. We asked for and received much beneficial criticism from machinists in other cities, operators in our plant and in other plants, salesmen and service men interested in line-casting machines and everyone whom we could encourage to make a suggestion. Of course, not all of them were adopted, but out of it we feel that we have developed a system of routine that is accomplishing wonderful results.



Machinist Force of the Des Moines "Register-Tribune." Seated, front row, left to right are: Neff Sowerwine, Day Machinist in Charge; Carl Bloomburg, Chief Machinist in Charge of Day and Night Crews; Russell Pefferle, Night Machinist in Charge. Standing, left to right: J. B. Powers, Assistant Day Machinist; Leon A. Link, Superintendent of Composing Room; Louis Humphrey, Assistant Night Machinist.

We print both morning and evening editions as well as a Sunday paper and have two crews of machinists. In charge of these two crews is Carl Bloomberg, who divides his time between the day and night shifts. This arrangement makes it easy for him to keep in close contact with the work being done by both crews and affords him an opportunity to check on the kind of work done. One man in charge of both crews eliminates passing the "old buck"—and we all know something about him. Neff Sowerwine is in charge of the day shift and Bert Powers is his helper. Russell Pefferle is in charge of the night shift and Louis Humphrey is his assistant. We are operating 24 machines. The accompanying charts are posted in the machinist's

*Superintendent of Composing Room, Des Moines (Iowa) *Register-Tribune.*

EDITOR'S NOTE:

As the business of manufacturing a newspaper progresses, it becomes more and more, a precise matter. In the commercial branch of the industry it used to be the custom to infer that "anything in the way of mechanical equipment was good enough for a newspaper," but in recent years this has not held true in many plants. Composing, engraving, stereotyping and press equipment have undergone marked changes. The industry as a whole has yet a long way to go. Along with this progression operating methods have also undergone a change. The ENGINEER is pleased to present Mr. Link's article explaining in detail the maintenance operations employed by Mr. Bloomburg so that others may read about controlled machine maintenance as it is applied successfully in one of the country's well managed newspaper composing rooms. One of the splendid effects resulting from controlled machine maintenance is that the superintendent of the composing room will be free from the worries incidental to a poorly conditioned plant and may devote his executive energies to other important matters.

MACHINE OPERATOR'S REPORT

Machine No..... Date.....

Operator will report condition of his machine at close of each shift which needs attention of machinist.

When machine is working Okey place an X in square opposite. ☐

Fill in below nature of trouble with machine.

Nature of Trouble	O'K'd by Op.

Have you reported this trouble to machinist?.....

State time of report.....

(Signed).....

Repaired by.....

Fig. 1.—This is a reproduction of Machine Operator's Report which is filled out daily by the operator and passed to the chief machinist. This form is used in the composing room of the Des Moines "Register-Tribune." It is a sort of "safety valve," by means of which the operator can report any machine trouble. Its use insures prompt attention to his machine by the machinist, who in turn does not have to rely on memory for the numerous complaints made by the operators in the course of a day's work.

work room and after the work for the week has been finished the charts are filed for future reference. On each sheet is listed the different kinds of routine work which is to be done by that shift. On the right side of each sheet are the numbers of the machines and accompanying squares, where the machinist who does the work checks it off by placing his initial in the proper square when the work is completed. It is important that the initial be used for checking off the work as it places the responsibility for that particular job and results in the job being done in a better way. If there should be neglect of any certain routine it is easy to determine who is responsible for that neglect. Some certain details of routine are done daily, some weekly, some every other week and some monthly. If for any reason the work for the week is not completed there is a place at the bottom of the sheet to enter it so that it can be carried over and taken care of the following week. However, it has not been necessary to do that since we inaugurated the system. It will be noted that in some instances one shift performs certain routine work on machines Nos. 1 to 12 inclusive, while the other shift takes care of the same work on machines Nos. 13 to 24 inclusive. This again places responsibility, not only as to detail, but also as to the general condition of machines assigned to the shift.

Each machine has four molds and each mold is numbered from 1 to 4. Each shift, it will be noted, does a

DAY WORK SCHEDULE

WEEK BEGINNING.....

DAILY ROUTINE —	Check Work Daily Done by — Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Clean all Plungers and Wells.							
Polish all Spacebands and count them.							
Clean molds, mouthpieces, mold wipers, polish vise jaws — (No. 1 to 12)							
Test Assembler Slide Adjustment to prevent tight lines.							
Straighten Mats in pans.							
Repair Damaged Bands.							

WEEKLY Machines Nos. 1 to 12, except where indicated.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Clean and oil Mod. 25 and 26 Distributors and Boxes.																								
Drill out Mouthpiece Jets and open Vents.																								
Clean and examine electric metal pot, thermostat, and clapper switches.																								
Lower Cradles on Intertypes, wipe off Magazines, and gather stray mats.																								
Clean Second Elevator and Seating places.																								
Examine machines for adjustments and loose screws.																								
Clean and Dust machines.																								
Clean and Oil Cam Surfaces.																								
Oil Machines — Nos. 1 to 24.																								
Clean metal from oil holes adjacent to metal pot.																								

CALIPER SLUGS —	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Agate .073																								
9 Pt. .126																								
10 Pt. .140																								
Height .918																								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Clean and oil keyboards. (One machine each week — Nos. 13 to 24)																								
Clean and polish mag. and mats — (One machine each week — Nos. 13 to 24)																								

EVERY OTHER WEEK (Machines Nos. 1 to 24)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
(1) Oil distributors, distributor driving pulleys.																								
(2) Oil Assembling elevator details and assemblers.																								
(3) Oil second elevator heads and guides.																								
(4) Oil knife blocks and Margach feeders.																								
(5) Oil magazine frame mechanism and cradles.																								
(6) Oil Pot Lever Shafts and Vise Frame Shafts.																								

MONTHLY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Remove, Clean and Oil Drive Shaft Friction Clutches.																								
Clean and Apply Vaseline on Distributor Gears.																								
Remove and Clean Distributor Boxes.																								
Remove and Clean Assemblers, Plate and Belt.																								
Oil Assembler Driving Gears on Linotypes.																								
Remove Molds from each machine, clean and polish, monthly. (Twelve Molds Weekly — Nos. 1 to 12.) 1																								
2																								
3																								
4																								

CARRIED OVER FROM LAST WEEK —	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Fig. 2.—Day Work Schedule employed in the Machinists' Department of the Des Moines "Register-Tribune" composing room. By studying this chart and the Night Schedule shown in Fig. 3, it will be noted that the various operations necessary in the maintenance of a battery of line-casting machines are distributed in an orderly manner over a weekly period. The spacebands are polished twice during each twenty-four hour period. The plungers and pot crucible wells are also cleaned twice daily. By dividing the 24-machine plant into two 12-machine sections, it is made possible to give daily attention to the molds, mouthpieces, mold wipers and vise jaws in order to prevent slugs trimming abnormally high, as well as to prevent metal squirts. Attention to these minor details prevents production stoppages.

thorough job of cleaning twelve No. 1 molds each week, twelve No. 2 molds the next week, and so on. This provides for a thorough job on each mold once a month in addition to the daily cleaning.

A glance at either sheet at any time during the week will inform the machinist in charge of the plant how the routine work is progressing. There is no forgetting this or that. It is on the schedule and the fellow assigned to the job must "sign for it" by placing his initial in the square when the work has been completed.

It may seem to some that this amount of detail would require more time than is at the disposal of the machinists but that is not the case. Our machinists have more spare time since the adoption of the routine system than they had before, because the effort devoted to routine work reduces the machine calls to the point where very little time is required. We keep an accurate record of each machine stop and since the adoption of the routine system we now have one machine call where we formerly had twenty. That may seem like an exaggeration but we have the figures to substantiate it. This system is much more satisfactory to the machinists, the operators and has reduced cost of supplies and parts more than 75%.

Of course no system will be a success unless the men responsible are interested in making it a success. We are fortunate in that every member of our machinist crew has taken a keen interest in applying the system which they all had a part in working out.

Each operator turns over to the machinist at the end of the shift a report as to how the machine is operating. When the repair or adjustment has been made by the machinist the operator signs an O.K. on his

Continued on page 29

NIGHT WORK SCHEDULE

WEEK BEGINNING.....

NIGHT ROUTINE —	Check Work Daily Done by — Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Clean all Plungers and Wells.							
Polish all Spacebands and count them.							
Clean molds, mouthpieces, mold wipers, polish vise jaws — (Nos. 13 to 24)							
Test Assembler Slide Adjustment to prevent tight lines.							
Straighten Mats in pans.							
Repair Damaged Bands.							

WEEKLY Machines Nos. 13 to 24, except where indicated.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Drill out Mouthpiece Jets and open Vents.																								
Clean and examine electric metal pot, thermostat, and clapper switches.																								
Lower Cradles on Intertypes, wipe off Magazines, and gather stray mats.																								
Clean Second Elevator and Seating places.																								
Examine machines for adjustments and loose screws.																								
Clean and Dust machines.																								
Clean and Oil Cam Surfaces.																								
Clean and Oil Distributor Shifters — (Nos. 1 to 24)																								
Clean and fill Grease Cups — (Nos. 1 to 24)																								
Clean metal from oil holes adjacent to metal pot.																								

CALIPER SLUGS —	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Agate .073																								
9 Pt. .126																								
10 Pt. .140																								
Height .918																								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Clean and oil keyboards — One machine each week — (Nos. 1 to 12)																								
Clean and polish mag. and mats — One machine each week — (Nos. 1 to 12)																								
(1) Clean and oil Miller saws. (2) Clean, Oil and Grease Proof Presses. (3) Clean and oil Rouse Band Saw and Mitering Saw. (4) Sharpen saw blades.																								

MONTHLY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Remove and Clean Distributor Boxes.																								
Remove and Clean Assemblers, Plate and Belt																								
Remove, Clean and Oil Drive Shaft Friction Clutches.																								
Remove Molds from each machine, clean and polish, monthly. (Twelve Molds Weekly — Nos. 13 to 24.) 1																								
2																								
3																								
4																								

CARRIED OVER FROM LAST WEEK —	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Fig. 3.—Neglect of certain maintenance duties, in any small or large plant, of line-casting machines, simply means that those machines will become "demoralized" operating units. By comparing this Night Work Schedule with the Day Work Schedule shown in Fig. 2, the reader will be impressed by the coverage of certain machinist duties which, if neglected, can seriously impair production. Checking the trimming knives is an important matter. Testing assembler slide adjustments regularly to prevent tight lines is another of the important operations. By collecting the matrices which accumulate in the machine trays or "pans" and giving them proper attention (by repairing, discarding or replacing them) the operator is assured a full supply at all times. Notice also that saws and proof presses receive regular attention by the machinist.

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HAILED as one of the greatest advances towards the production of better printing plates are two new pieces of stereotype equipment now offered by Goss. They are designed to meet the demand for superior stereotype plates for color and black printing of both newspapers and magazines.

Stereotype plates produced by the Vacuum Electrically-Heated Casting Box and Double Knife Curved Shaver compare very favorably with electrotypes, without the expense and loss of time necessary for the production of electros.

Two important principles are incorporated in the new Goss Vacuum Electrically-Heated Casting Box. They make possible the casting of stereotype plates for the most exacting color or black printing.

THE GOSS PRINTING PRESS COMPANY · CHICAGO, ILL.
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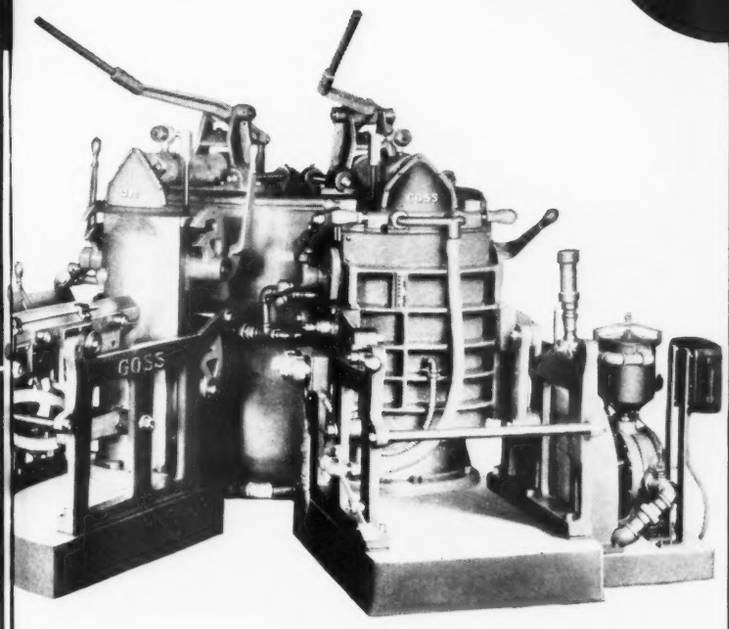
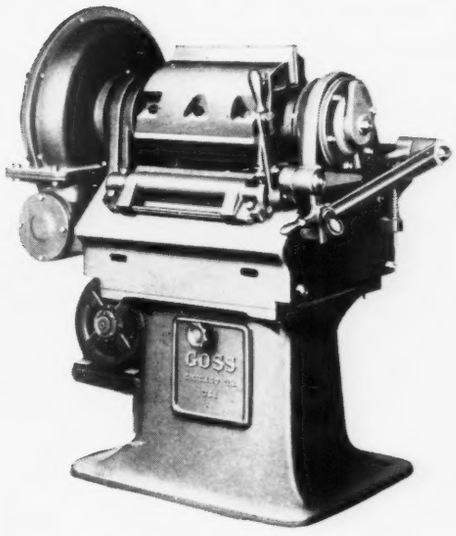
San Francisco Office: 707 Call Building
The Goss Printing Press Company
of England, Ltd., London

GOSS

VACUUM ELECTRICALLY-HEATED CASTING BOX AND DOUBLE KNIFE CURVED SHAVER





VACUUM SHARPER DETAIL

ype plates produced by ss Vacuum Electrically- Casting Box have an ed printing surface. De- harper and more accu- igh and low spots are ted.

vacuum suction holds t in close contact with urately curved portion box while the plate is ast. The vacuum action enetrates the mat and on the stereotype metal, it into closer contact e mat. It also tends to ll trapped air, or steam g from any moisture y remain in the mat.

When such air or steam forms on the type surface it prevents the stereotype metal from filling in sharp detail.

ELECTRICALLY-HEATED FOR BETTER TEXTURE

Stereotype plates of more desirable texture and density are also produced by the Goss Vacuum Electrically-Heated Casting Box. Defects arising from too rapid cooling are eliminated. This is accomplished by having both casting members equipped with electric heating units which raise the temperature of these parts to the desired level. It also dispenses with the necessity of casting heater plates.

A Double Knife Curved Shaver that is both faster and more accurate than a boring machine is introduced by Goss to be used in conjunction with the new casting box. The vacuum casting box allows 18 1000 of an inch for shaving in the double knife shaver. The first knife takes a 12 1000 inch cut and the second knife 6 1000 of an inch.

Tests of plates produced with this new equipment show that the maximum variation in thickness throughout the plate was less than 1 1000 of an inch.

Goss offers these two new pieces of stereotype equipment confident that they will meet the needs of publishers of newspapers and magazines seeking better plates for both color and black printing.

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WE now have available these strong, durable binders for your back copies of Printing Equipment Engineer. These binders are finished in dark blue Dupont Fabrikoid. They will hold twelve issues. Cover is embossed in gold and the name Printing Equipment Engineer together with 1931, 1932, or 1933 stamped on the back edge. These binders will keep your back copies clean, and always available for future reference.

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Printing Industries Division Meeting Called Off

It has been decided that there will be no meeting of the Printing Industries Division of the American Society of Mechanical Engineers during the annual meeting of the Society in New York City from December 5 to 9, with demonstrations and exhibits, as had been planned, but that these features will be included in the program for the Fourth Technical Conference of the Printing Industry to be held in Chicago during the week of June 26, 1933.

Monotype Company Has Option on Directoplate

On September 14 all of the physical assets of the Directoplate Corporation, Chicago, Ill., manufacturers of offset printing equipment (with the exception of a few factory tools and certain patents covered by mortgage) were purchased at bankruptcy sale by Cecil Emery, a well-known member of the Chicago bar. The Lanston Monotype Machine Company has obtained an option from Mr. Emery for all of these assets. Pending decision as to whether the option will be exercised, the Monotype Company has been appointed by Mr. Emery as his agent.

Pending settlement of the option, it is reported that the Monotype Company is investigating the possibilities of developing the Directoplate line of equipment accessory to offset printing. In addition it is thought an effort will be made to clarify the rather complicated patent situation which exists in relation to offset processes.

Meeting of Illinois Newspaper Executives

At the fall meeting of the Illinois Newspaper Composing Room Executives' Association held in Joliet, Ill., November 5 and 6, F. W. Schaub, business manager of the Decatur Newspapers, Inc., delivered the principal address at the Sunday afternoon session. The speaker admonished composing room executives to keep and understand composing room cost records.

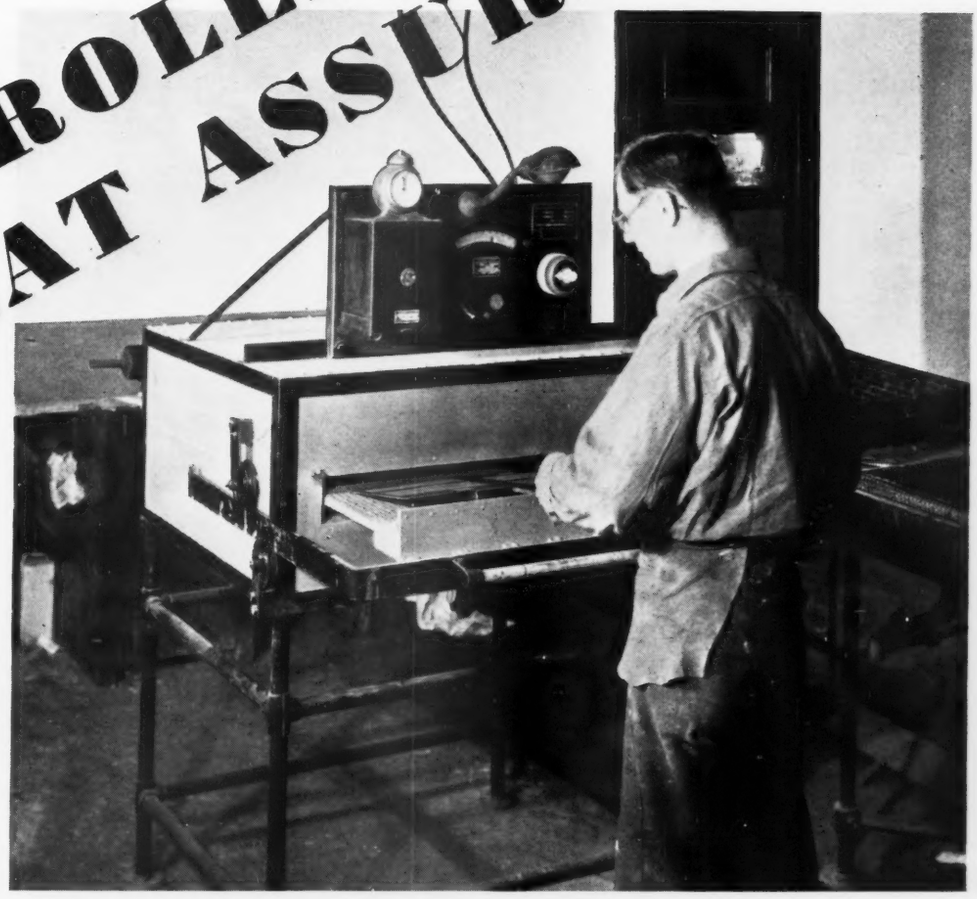
George Bolton, mechanical superintendent of the Joliet *Herald-News*, presided at the Sunday morning session. The speakers were Mayor William Hennessy of Joliet; J. F. Lux, General Manager, Managing Editor Lester F. Wilson, City Editor O. L. Anderson, Advertising Manager R. M. Howk, of the *Herald-News* and State Senator Richard J. Barr.

The afternoon session was conducted by Russell B. Miller, president of the association. J. O. Carr, general manager, spoke on "The Background of the Teletypesetter," and Walter Morey, inventor, explained operation of the machine. The Question Box, in which members discussed problems arising in their departments, was presided over by Leon A. Link, superintendent of the composing room, Des Moines *Register-Tribune*.

Delegates from newspapers in the following cities attended: Joliet, Elgin, Aurora, Freeport, Danville, Peoria, Decatur, Rockford, Springfield, St. Charles, Chicago, Galesburg, Moline, Ottawa, Bloomington, Champaign, La Salle, Streator, Gary, Ind.; Kenosha, Wis.; Des Moines and Clinton, Iowa.

The next meeting of the association will be held in Rockford, Ill., next June.

CONTROLLED HEAT ASSURES



1. PHOTO ENGRAVINGS THAT STAND UP UNDER MATRIX PRESSURE

2. PROPER REGISTER FOR COMBINATION COLOR PLATES

¶ Accurately controlled electric heat now brings speed, economy and absolute certainty to the burning-in of zinc and copper plates! ¶ The newly developed Ajax Electric Burning-In Furnace eliminates the possibility of disastrous overheating so difficult to avoid in the open gas flame. This new furnace sets the resist on the printing surface perfectly without damage to the temper of the metal. It assures greater stamina to withstand long matrix runs under heavy pressure. Furthermore, because of the evenness of the heat distribution, there can be no variation in shrinkage. Think of what this fact alone means in accurate color register! ¶ In times of peak load, it allows an etcher to powder one plate while another is being burned-in. Also, the automatic thermostatic current cut-off brings a worthwhile economy in operation. ¶ The Ajax Electric Burning-In Furnace is as great an advance in its field as electric refrigeration. It offers a practical investment in efficiency and economy. Produced and guaranteed by one of the best known manufacturers of electrical industrial equipment. For illustrated folder giving complete details write to *Rolled Plate Metal Company, Distributors, 52 Vanderbilt Avenue, New York.*

AJAX *Electric Burning-in* FURNACE

November Printing Patents

Printed copies of patents are furnished by the Patent Office at 10 cents each. These may be obtained by addressing the Commissioner of Patents, Washington, D. C.

1,884,214. PRINTING ROLLER AND MEANS FOR MAKING THE SAME. Fritz Priemer, Zschachwitz, near Dresden, Germany. Filed Dec. 12, 1928, Serial No. 325,635, and in Germany June 11, 1928. 4 Claims. (Cl. 91—67.8.)

1. A process of covering a printing roller with a coating of leather dust, copal and hardened oil, consisting in mixing the ingredients of the coating in powdered form, feeding the powder in a thing stream on to the rotating printing roller, heating the powder on the roller, and pressing the stream of powder continuously on to the roller surface.

1,884,331. METHOD OF AND MEANS FOR INDICATING PAPER DRYNESS. Stephen A. Staege, Pittsburgh, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 28, 1930. Serial No. 456,781. 9 Claims. (Cl. 73—51.)

8. In a paper-dryness indicating system for indicating the moisture content of a moving web of paper, a roll, means for supporting the roll in frictional engagement with the web at a predetermined pressure therebetween independent of variations in the tension of the web, a dynamo-electric machine mechanically coupled to the roll, electric means associated with the dynamo-electric machine to cause the roll to rotate at a peripheral speed differing from the speed of the web and current responsive indicating means actuated by the armature current of the dynamo-electric machine for measuring the moisture content of the paper.

1,884,556. PRINTING PRESS. Martin W. Brueshaber, River Forest, Ill., assignor to The Goss Printing Press Co., Chicago, Ill., a Corporation of Illinois. Filed Sept. 28, 1929. Serial No. 395,794. 17 Claims. (Cl. 101—219.)

1. A printing press, comprising in combination a printing couple at least one member of which is in the form of a cylinder, a shaft on which the cylinder is mounted, anti-friction bearings for the shaft for supporting the cylinder pressed into operative impression relationship with the other member of the couple, and other anti-friction bearing means for applying pressure to the cylinder in the opposite direction from that in which pressure is applied by the first named bearings serving to hold the shaft against the working faces of the first named bearings.

1,884,685. METHOD OF RECONDITIONING PRINTING PLATES. Landon Hill and John Douglas Hobby, Raleigh, N. C. Filed Sept. 6, 1929. Serial No. 390,842. 2 Claims. (Cl. 101—401.1.)

1. The herein described method of reconditioning metal plates used in printing apparatus, consisting in first treating the metal surface of the plate with a cleansing fluid to remove ink or other substances on the plate, then removing the cleansing fluid from the plate and permitting the plate to dry and finally drawing a strip of rubber containing an abrasive back and forth over the surface of the plate.

1,884,977. SPACEBAND RAIL FOR TYPESETTING MACHINES. Edward C. Jones, Hoquiam, Wash. Filed Nov. 4, 1930. Serial No. 493,358. 1 Claim. (Cl. 199—36.)

In a typesetting machine, a spaceband guide including a grooved bar, a rail having a lower portion fitted in the groove of the bar and an upper portion of a width greater than the lower portion, and a spaceband having a lower slotted end to slide on the upper edge of the bar, the upper portion of the bar of greater width having a straight transverse edge and of such width with respect to the slot of the space band as to prevent the spaceband from tilting laterally and binding on the rail, and a retarding pin on the rail to engage the lower end of each spaceband as it leaves the rail and limit the upward movement of the spaceband and hold the end of the spaceband back until the upper end thereof is pulled far enough into the spaceband box of the machine to permit the band to slide freely over the pin.

1,884,345. APPARATUS FOR CASTING TYPE FURNITURE. Ashton G. Stevenson, Chicago, Ill. Filed Apr. 23, 1931. Serial No. 532,335. 4 Claims. (Cl. 199—55.)

1. In a mold, a mold body having a passage therethrough, closure means for the front end of said passage, a core for partially closing the rear end of the passage, a reinforcing bar, and a support rigidly uniting the core to the reinforcing bar.

1,885,131. PRINTING PRESS. Nels H. Nelson, Dayton, Ohio, assignor to Merchant Association, Inc., Dayton, Ohio, a Corporation of Ohio. Original application filed July 26, 1930, Serial No. 470,824. Divided and this application filed July 13, 1931. Serial No. 550,403. 4 Claims. (Cl. 271—61.)

1. In combination, a feeder table adapted to support a plurality of stacks of sheets, an arch member carried by the table arranged over and transversely of the sheets, supporting clamp members mounted over the stacks of the sheets adjustably on the arch, transversely adjustable members carried thereby, and adjustable depending fingers supported by each transversely adjustable member engaging the backs of the stacks of the sheets.

1,885,262. MECHANISM FOR SUPPLYING WEBS OF PAPER TO A ROTARY PRINTING PRESS. Albert J. Horton, White Plains, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a Corporation of New York. Filed Apr. 5, 1928. Serial No. 267,705. 4 Claims. (Cl. 242—58.)

1. In a mechanism for feeding a web to a printing machine, a roll support adapted to hold a running web roll and a spare web roll and movable to bring the rolls from loading position to running position, a pasting mechanism including rollers supported on each side of the path of the web running to the machine and movable toward each other to press the end of the web from a new web roll against the running web, jaws or the like adjacent each of the rollers, adapted to hold the end of a web and arranged to open when the rollers are pressed together, and a normally inactive accelerating roller adapted to engage the periphery of the roll in running position and rotate it at a slower peripheral speed than the speed at which the web is taken by the machine.

1,885,313. FOLDER FOR PRINTING MACHINES. Adolph M. Zuckerman, New York, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a Corporation of New York. Filed Sept. 9, 1929. Serial No. 391,200. 9 Claims. (Cl. 270—1.)

1. In combination with a printing machine folder, a perforating mechanism including a reciprocating punch, means for conveying a previously printed and cut product to the perforating mechanism and to a delivery point, means for registering the product for perforating, and means for compressing the product adjacent to the point at which it is perforated and holding it compressed while it is being perforated and while the punch is being withdrawn.

1,885,351. WEB ROLL CONTROLLING MECHANISM. Albert J. Horton, White Plains, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a Corporation of New York. Filed June 8, 1927, Serial No. 197,394. Renewed Mar. 23, 1932. 6 Claims. (Cl. 242—75.)

1. Web controlling mechanism having in combination a support for a running web roll, a friction strap or belt engaging the surface of the web roll for controlling its unwinding, a controller roll riding in a loop of the web, a pair of chains to which the controller roll is connected and located outside the path of the running web, connections between the chains and the strap, and a sprocket shaft over which the chains pass.

1,885,434. FEEDING DEVICE FOR STUFFING MACHINES. Severin Halvorsen, Chicago, Ill., assignor to The Newspaper Stuffing Machine Company, Seattle, Wash., a Corporation of Washington. Filed June 21, 1929. Serial No. 372,661. 13 Claims. (Cl. 270—55.)

1. In a machine, the combination with a reciprocating frame of a pair of feeder arms attached to the frame arranged to engage paper sections and carry the sections forward in a horizontal plane.

1,885,725. METHOD FOR MAKING MULTICOLOR PRINTING PLATES. Gerald S. Howland, Brookline, Mass. Filed Oct. 8, 1929. Serial No. 398,275. 2 Claims. (Cl. 95—5.3.)

1. The method of making multicolor printing plates for reproduction in color consisting in making a series of photographic negatives, one in black and white and the others with color filters, the negatives corresponding in number to the number of plates desired, preparing a print from each of the negatives, retouching the prints to bring out in black and white the color values of the respective colors in the subject, then preparing photographic negatives of the series of prints, using a suitable half-tone screen and with a prism lens for securing upon the negatives the images of the prints in unreversed position, the prints being arranged at different angles when photographed to avoid patterning, then printing from the negatives upon sensitized plates suitable for etching and finally etching the plates to obtain the respective color values shown in the retouched prints.

1,885,777. MOLD FOR TYPOGRAPHICAL MACHINES. Samuel E. Sperry, Hollis, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a Corporation of New York Filed Nov. 7, 1930. Serial No. 494,099. 9 Claims. (Cl. 199—55.)

1. In a typographical machine having a mold movable to and from a stationary casting position and closed by relatively movable parts presenting parallel faces for casting parallel sided slugs, means for holding the mold parts yieldingly in closed cooperative relation while the mold is out of casting position, and means operative while the mold is in stationary casting position to hold the mold parts firmly in closed casting relation.

1,885,819. PHOTO-ELECTRIC TUBE. Heinrich H. Geffcken and Hans R. Richter, Leipzig, Germany. Filed Dec. 7, 1928. Serial No. 324,470, and in Germany Dec. 9, 1927. 4 Claims. (Cl. 250—27.5.)

1. A photo-electric tube having a sealed envelop; a light sensitive cathode; an anode electrode positioned within the envelope in the end to be exposed to the light rays; a terminal connected to the cathode; a terminal connected to the anode electrode; and a conduit extending into the envelope through the cathode and separately mounting the anode termina-

1,885,958. ADJUSTABLE PRINTER'S CHASE. Robert J. Snedden, Kansas City, Mo. Filed Jan. 18, 1930. Serial No. 421,739. 6 Claims. (Cl. 101—393.)

1. A device comprising a rigid frame, a non-adjustable chase supported for slidable movement by the frame, resilient means whereby one surface of the chase is maintained against the frame, and means for holding the chase in any predetermined position along the path of movement.

1,886,099. TYPOGRAPHICAL DISTRIBUTING MACHINE. John H. Hilpman, Hollis, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Feb. 15, 1930. Serial No. 428,678. 6 Claims. (Cl. 199—34.)

1. In or for a typographical distributing machine, a pi-stacker for circulating sorts-matrices including, in combination, a ledge whereon the matrices are supported, a throat or chute located at the receiving end of the pi-stacker for directing the matrices onto the ledge, a rotary two-arm star wheel for stacking the matrices successively in line as they emerge from the throat, a yielding resistant for sustaining the line, and a resilient member arranged at the lower end of the throat for guiding the matrices into the line.

1,886,108. TYPOGRAPHICAL COMPOSING MACHINE. Luther L. Kennedy, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Nov. 6, 1930. Serial No. 493,737. 11 Claims. (Cl. 199—18.)

1. A keyboard for typographical composing machines including, in combination, a supporting frame, a series of matrix releasing keys and a spacer releasing key movably mounted therein, and unitary locking means adjustable to active and inactive position and arranged to engage all of the finger keys directly so as to prevent or permit their actuation according to the adjusted position of the locking means.

1,886,282. ELEVATOR CONTROL MECHANISM FOR PRINTING PRESSES. Charles L. Low, Benton Harbor, Mich., assignor to Lisenby Manufacturing Company, Fresno, Calif., a Corporation. Original application filed Mar. 25, 1929, Serial No. 349,637, now Patent No. 1,762,661, dated June 10, 1930. Divided and this application filed Jan. 27, 1930. Serial No. 423,625. 3 Claims. (Cl. 271—62.)

1. In combination with a vertical movable support for a pile of sheets adapted to be individually withdrawn therefrom and means to withdraw the sheets; a pivoted lever, means to raise the support by the turning of the lever in one direction, means for turning the lever only when the latter assumes a predetermined position, means tending to turn the lever to such position, a lip projecting laterally from the lever, a member normally engaging the lip from that side which will prevent the lever from turning, a turnable shaft from which the member projects, a second shaft parallel to the first shaft, a horizontal rod projecting from the second shaft over the support and the pile thereon, a finger mounted on the rod to engage the topmost sheet of the pile, connections between the shafts whereby a downward swinging of the rod a certain distance as governed by the lowering of the pile will rotate the first shaft sufficiently to cause the lip engaging member to clear the lip, means incorporated with the connections to permit of a limited upward swing of the rod without moving the lip engaging member, and means applied to the second shaft and functioning in coordinated conjunction with the operation of the sheet withdrawing means to intermittently rotate the second shaft to the lift rod.

1,886,527. ELECTRIC MOTOR DRIVE FOR WEB PRINTING AND CUTTING MECHANISMS. Calvert B. Cottrell, 3d, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a Corporation of Delaware. Filed July 3, 1929. Serial No. 375,830. 6 Claims. (Cl. 101—227.)

1. Web printing and cutting mechanism and an electric motor drive therefor, including a source of current supply, a master motor for the printing mechanism and an auxiliary motor for the cutting mechanism, and means for maintaining the auxiliary motor at a predetermined speed relative to the master motor.

1,886,528. ELECTRIC MOTOR DRIVE FOR WEB PRINTING MECHANISM. Calvert B. Cottrell, 3d, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a Corporation of Delaware. Filed July 3, 1929. Serial No. 375,831. 7 Claims. (Cl. 101—178.)

1. A web printing press comprising two printing units and an electric motor drive therefor, including a source of current supply, master and auxiliary driving motors for the two printing units, and means for maintaining the auxiliary motor at a predetermined speed relative to its master motor.

1,886,529. BED AND CYLINDER PRINTING PRESS. Calvert B. Cottrell, 3d, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a Corporation of Delaware. Filed May 12, 1931. Serial No. 536,801. 22 Claims. (Cl. 101—278.)

1. In a bed and cylinder printing press, a reciprocating bed, an oscilating impression cylinder operable, on each stroke, to successively take, print and deliver two sheets, and two inking mechanisms, one operable on one stroke and the other operable on the opposite stroke of the bed.

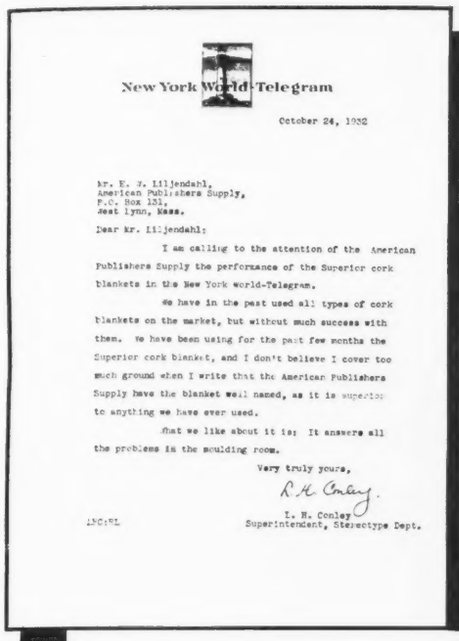
1,886,530. BED AND CYLINDER PRINTING PRESS. Calvert B. Cottrell, 3d, Westerly, R. I., assignor to C. B. Cottrell & Sons Company, Westerly, R. I., a Corporation of Delaware. Filed May 15, 1931. Serial No. 537,614. 4 Claims. (Cl. 101—278.)

1. In a bed and cylinder printing press, a bed and its form reciprocating in a right line, an inking mechanism, an oscillating impression cylinder rotating substantially one and one-half revolutions on each of its strokes, means for feeding a sheet to the cylinder on its printing stroke, and means to take the printed sheet tail end first from the cylinder on its non-printing stroke.

1,886,556. PROCESS OF MAKING COLOR-PRINTING PLATES. John M. Keenan, Toronto, Ontario, Canada. Filed Mar. 26, 1931. Serial No. 525,609. 7 Claims. (Cl. 95—5.1.)

1. In a process of making color-printing plates the steps which consist in making ordinary "color-separation" negatives from an original representing the three primary printing colors red, yellow and blue; making positives from the negatives; superimposing a positive taken from the blue color separation negative on the yellow color separation negative to serve as a corrective "cut-out;" superimposing a positive taken from the blue color separation negative on the yellow color-separation negative to serve as a corrective "cut-out;" superimposing on a blue color-separation negative a positive taken from a color-separation negative representing light of a longer wave length; and, with a camera, producing a positive of each combination by light transmitted therethrough.

PROVES ITS SUPERIORITY BY PERFORMANCE



New York World-Telegram

October 24, 1932

Mr. E. V. Liljendahl,
American Publishers Supply,
P.O. Box 153,
West Lynn, Mass.

Dear Mr. Liljendahl:

I am calling to the attention of the American Publishers Supply the performance of the Superior cork blankets in the New York World-Telegram.

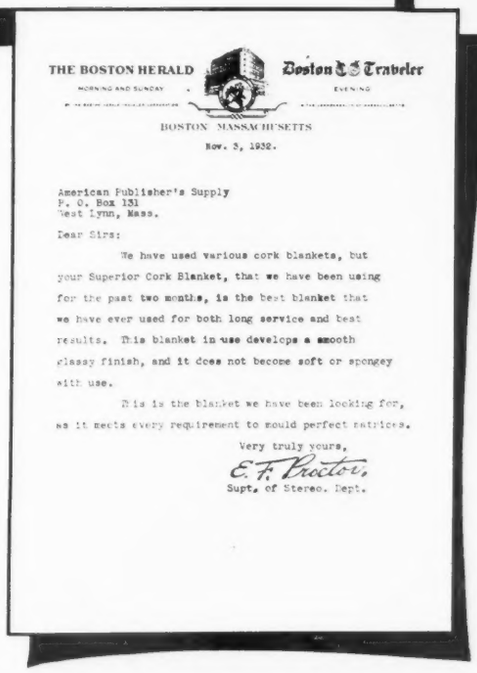
We have in the past used all types of cork blankets on the market, but without much success with them. We have been using for the past few months the Superior cork blanket, and I don't believe I cover too much ground when I write that the American Publishers Supply have the blanket well named, as it is superior to anything we have ever used.

What we like about it is: It answers all the problems in the moulding room.

Very truly yours,

I. H. Conley
Superintendent, Stereotype Dept.

IHC:EL



THE BOSTON HERALD
MORNING AND SUNDAY

Boston Sunday Traveler
EVENING

BOSTON, MASSACHUSETTS

Nov. 3, 1932.

American Publisher's Supply
P. O. Box 153
West Lynn, Mass.

Dear Sirs:

We have used various cork blankets, but your Superior Cork Blanket, that we have been using for the past two months, is the best blanket that we have ever used for both long service and best results. This blanket in use develops a smooth glassy finish, and it does not become soft or spongey with use.

This is the blanket we have been looking for, as it meets every requirement to mould perfect matrices.

Very truly yours,

E. F. Proctor,
Supt. of Stereo. Dept.

The two letters illustrated above are but two of the great many received from satisfied users of SUPERIOR CORK MOULDING BLANKETS.

—on the job

The SUPERIOR CORK MOULDING BLANKET

The Superior Cork blanket is scientifically constructed to insure perfect mats, moulded to a positive uniform depth without fracturing or cracking the blanks or the mat.

The moulded impression is more uniform than that produced by any other blanket. The blanks or open spaces in the matrix are of such uniform depth that stereotypers in most cases use only one thickness of packing for backing up — an economical feature that saves time and speeds production.

The Superior blanket is self-glazing, becomes smoother and smoother through continued usage, and requires no coating or doctoring, usually found on ordinary blankets, to produce a smooth rolling surface free from lumps and rough spots.

It retains its original thickness, practically until worn out, without disintegrating, spreading, warping, or becoming rough or spongy which prevents uniform moulding.

The Superior Blanket is justly named Superior, attested to by outstanding performance on the job — and by hundreds of satisfied users, two of whose letters are reproduced above.

If you are not getting perfect, uniform mats, requiring a minimum of time and labor in backing-up, CHANGE NOW to Superior, the most economical, most efficient blanket on the market today.

Size 21 x 25 inches

Price $2.50 each net

Manufactured only by the

AMERICAN PUBLISHERS SUPPLY

LYNN, MASSACHUSETTS

SOLD EXCLUSIVELY BY AUTHORIZED SALES AGENTS:

Burgess Cellulose Company, Freeport, Illinois.
Reed Roller & Supply Co., Inc., Seattle, Washington.
Wood Flong Corporation, Hoosick Falls, N. Y.
Certified Dry Mat Corporation, New York City.

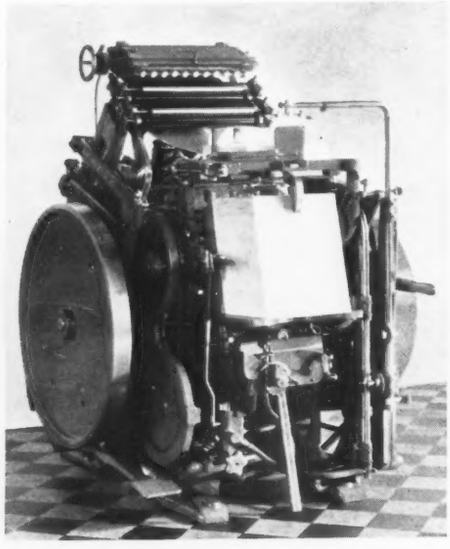
Latest Printing Equipment Mechanisms

New C. & P. Craftsman Press with Automatic Feeder

Officials of The Chandler & Price Co., Cleveland, Ohio, have announced a new 10x15 Craftsman Press with Rice Automatic Feeder and many improvements.

Instead of platen adjustments, the press bed and type form are moved forward or backward to maintain alignment with the platen by two hand wheels with indicators and graduated scales. The platen and platen rocker are cast together as a single unit, to provide rigidity and impression strength.

It is claimed that this new type of construction makes this press available for many halftone and color jobs heretofore



run on larger presses at higher hour costs, and saves much make-ready time formerly required for adjusting the platen or changing the packing when going from one form to another.

Additional make-ready time is saved because, with feed and delivery bars removed, the platen is unobstructed and completely accessible.

With stock pile in feeding position, feed and delivery bars are slipped into place, delivery table swung around into delivery position, automatic jogger fingers adjusted and the press is ready to run.

Feeding motion is simple and direct. With the Rice Feeder, the sheet is picked off the lower pile, travels a minimum distance to the platen, then is removed and delivered, face up, onto the delivery table immediately above the stock pile, and evenly jogged. (Delivering printed sheets face up, above the stock pile, permits constant inspection of the work; it also makes practical the use of an electric sheet dryer when desired.) The feed table accommodates 15 in. of stock at a single "lift."

Register, it is claimed, is extremely accurate. The sheet is pulled (not pushed) into register against the bottom and side gauge pins, and held firmly against the gauge pins until the grippers take hold of it. A stiff sheet will not rebound from the gauge pins, nor will a light sheet buckle or interfere with accurate register. Side register may be either to left or right according to the requirements of the job.

The Rice Feeder accommodates sheets from 2½ in. by 4 in. up to full press capacity, in any stock from onion skin to heavy cardboard. Envelopes, small sheets and cards are handled and fed as readily as larger sheets.

A feed table is placed in a socket provided for the purpose and hand-feeding can start immediately if desired.

Ink distribution is by four form rollers, two vibrating rollers and a new style long fountain with convenient front blade adjustment. All form rollers cover the form completely, and do not reverse on the form. Trip trucks are provided for the lower form rollers so that these rollers ink on the upstroke only when desired, to ink heavy forms evenly. The positive-moving ink disc is silent in operation. The extension roller tracks relieve excess pressure of form rollers on the ink disc, saving wear on the rollers. The roller bed tracks are replaceable and can be adjusted to compensate for variation in the diameter of form rollers and for the weight of inking desired on the surface of the form.

The frame of the press is a one-piece solid casting with heavy reinforcing ribs, providing vibrationless foundation and maintaining true alignment of shafts and bearings. To aid faster, smoother operation of press and feeder, the platen movement has been cut down approximately one-third; this feature, together with a deeper raceway for the cam roller in the gear wheel, saves wear on the press operating mechanism. The flywheel is solid and is balanced for easy running. The powerful, quick-acting foot brake is permanently attached to the press.

New Method for Opaquing Negatives

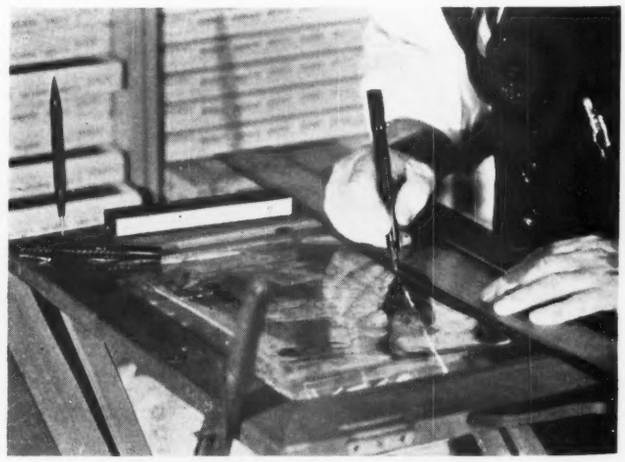
Special Fountain Pens for opaquing negatives have been developed by Bourges Service, Inc., New York, which it is claimed are three times faster than the brush method, for the reason that they eliminate time-consuming motions incidental to the brush method of opaquing.

By the Fountain Pen Method opaquing can be started directly onto the negative and the work can be done in any direction, free-hand or in combination with ruler for straight lines.

The pens are of the reservoir type and have about double the ink capacity of the usual ink-sack type of fountain pen. One filling, as a rule, will last for one night or day's continuous work.

Although the Pens have been grooved for the extra heavy special Opaque Black and White Ink any good grade of drawing ink can be used in the pens. The pens are always ready for instant use.

The special Opaque Black Ink remains of permanent consistency and requires no mixing. It will not settle, and,



although it dries quickly, it does not dry brittle and will not crack even on a flexible surface such as film negatives or shading sheets. When dry, the ink has the same characteristics as the detail of the Shading Sheet, and can be removed to any shape by rubbing off with the usual stylus or treated stump.

The Opaque White Ink will not solidify, but will settle. It also dries flexible and can be used direct on Velox Prints for outlining or retouching without any danger of creeping or cracking-off.

These pens are being used in three departments of the U. S. Government, by photo engravers, lithographers, gravure workers, photographers, and artists in general.

The pens are made up in one standard size and three different points: No. 1, fine point for high lighting and fine detail; No. 2, broad point, sufficiently wide for guide for router, either when used with white ink on photograph or black ink on negative, and No. 3, extra broad point, sometimes used for router guide, but as a rule, mostly used for fill-ins and drop-outs.

Mr. Bourges feels that credit should go to the Sterling Engraving Company of New York, and the Superintendent of Engraving for the New York *Daily News*, for cooperation in trying out the first models and ink mixtures.

New Sterling Vee Slot Hook

The Printing Machinery Co., makers of precision mounting bases and registering devices, 436 Commercial Square, Cincinnati, Ohio, announce a new Hook for users of vee slot plate cylinders.

This Hook is designed for the popular vee slot which is used extensively on magazine rotary presses and in the past has always been used on flat-bed bases.

The Sterling Vee Slot Screw is made of special alloy steel and properly tempered in a controlled furnace. The manu-

facturers claim the strength of this screw has been greatly increased. The Sterling Vee Slot Jaw is also made of an alloy steel, tempered under the same conditions as the screw. Because an alloy steel is used, it is possible to make the jaw ⅜ in. wide instead of ½ in. The third part of this Hook which is the Nut, is made to the same high standard as the other pieces.

New Model Composing Room Saw Announced

The Sypher-Arcon Mfg. Co., Tool Manufacturers, Toledo, Ohio, announce a Model A saw for composing room use. This is a high speed circular saw that handles both wood and metal; a vertical saw for mortising; a trimmer; a sliding mitre guide, pica gauge, and vise that makes accuracy automatic.

The circular saw with its speed of 3000 r.p.m. runs in bronze bearings. It is carefully balanced, free from vibration, and a fast and quiet worker, sawing linotype or monotype slugs, rules, borders, or furniture.

The vertical saw is driven from below the table without any spring or supplementary mechanism at the top of the blade, simply a hardened guide at the top to insure accuracy. An assortment of blades for different types of work are supplied. Blades can be changed in less than a minute, or removed entirely to clear table for circular saw use. Drive mechanism runs in oil and is self-lubricating. Trimmer and circular saw can be operated as a cutting and trimming unit, or separately.

Inside mortising is especially easy on this machine. The end of the drive shaft is machined to take a ⅜ in. Jacobs Drill Chuck (an extra) so an electro can be drilled, and without

BURGESS CHROME MATS

BURGESS SERVICE and QUALITY

●

September 27, 1932.

Mr. Joseph D. Goggin,
Service Representative,
Burgess Cellulose Company
Freeport, Illinois.

Dear Mr. Goggin:

This is to express our appreciation for the splendid service call which you gave our plant on Wednesday, September 21. Our pressman, stereotyper and foreman all report very excellent service and information provided by you and your engineer.

That is the kind of service which indelibly cements a client with your company. I wish you would pass this information on to your organization and let them know that we are extremely grateful to you for everything you have done for us.

I am awfully sorry not to have been in on occasion of both of your calls and hope to have the opportunity of meeting you personally at some later date to thank you for all the good work done for us.

Sincerely yours,

Wisconsin Rapids Daily Tribune
By W. F. Huffman

WFH:JM

●

If you are not taking advantage of what Burgess can do for you — write now to

BURGESS CELLULOSE COMPANY
Freeport, Illinois

BURGESS CHROME MATS

BURGESS CHROME MATS

BURGESS CHROME MATS

That's Why We Have Trouble With Our Type Metal

"SEE THOSE FELLOWS IN THERE? They are all waiting to put in their bid for our new metal supply. Just as long as we have those fellows in there waiting to sell their metal on a bid basis at so much per pound, regardless of quality, you and I are going to have trouble with our metal. That is the reason why we have such high metal costs.

"If the front office would follow my idea of buying highest Quality Imperial Type Metal serviced by the Plus Plan, forgetting this bid business, we would have better looking work, less machine and metal trouble, and at the end of the year we would show lower metal costs than we do now. That is why I believe it best to —

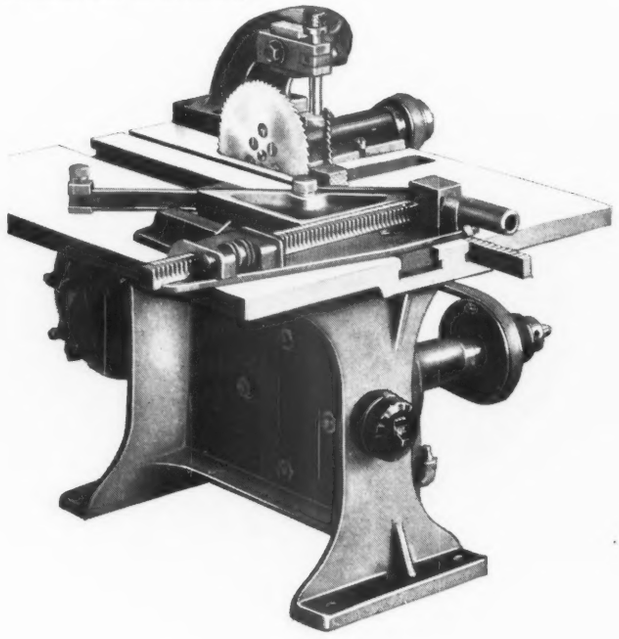
change to

Imperial
METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

laying it down, slipped down on the vertical saw and the mortise completed.

The pica gauge has a capacity of 55 picas and a 12-point vernier adjustment. Vertical slots permit a life-time of wear without loss of accuracy.



The vise handles metal as short as a single pica. It is simple, accurate and positive—nothing to get out of order or make trouble.

The entire machine is driven by a single ¼ h.p. motor which is mounted on a swinging bracket so the belt tension can be regulated by a single adjusting screw.

The table is 15x18 in., with entire surface and slide grooves accurately machined.

The bearings throughout are bronze and lubrication is semi-automatic.

The circular saw runs 3000 r.p.m. and the vertical saw operates at a speed of 1325 r.p.m. Shipping weight 125 lbs. Net, 100 lbs. Motor, 20 lbs. extra.

The Model A saw is one of several kinds made by the Sypher-Arcon Co. for the use of printers.

Ludlow's Tempo Medium Italic

The latest addition to the popular Tempo family announced by the Ludlow Typograph Company as available in matrix form, is Tempo Medium Italic, the 24-point size of which is here shown. In addition to the alphabet of standard italic capitals there is available a complete alphabet of cursive caps with considerable freedom of design. These are also shown.

A NEW TEMPO DESIGN
Makes its First Appearance
Makes First Appearance

Tempo Medium Italic carries out in a heavier version the same features of design as are represented in Tempo Light Italic, which has been so favorably commented upon by typographers. Particularly when used with the cursive caps, it affords a real contrast to the geometrical severity of the roman.

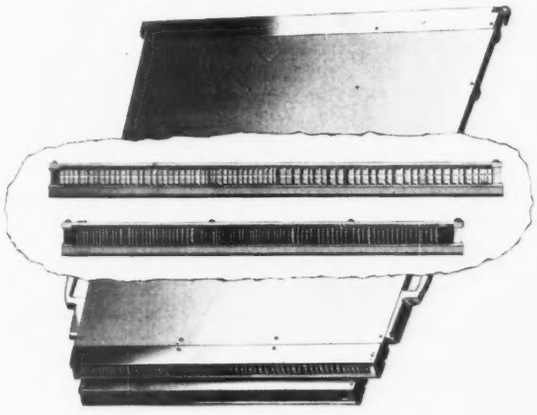
Intertype's Model G Combination Mixer

By L. W. WILLIS*

The combination of the Mixer feature in a new and wider range Text and Display machine is another progressive Intertype creation for effecting savings by cutting down costs in the composing room. This new machine follows the design of the Model F Intertype Mixer.

Several of the important features of the Model G Intertype are as follows: First, any operator can get maximum output because he can set text, display or mixed composition at straight-matter speed. Only a flip of the finger is necessary to bring about instant change of face. Second, full display fonts of full-width 30-point and some 36-point as well as condensed larger faces run in the main display magazine and are set from the main standard 90-character keyboard.

The illustration shows the new 72-channel magazine, which is over 2 in. wider than the regular 72-channel display magazine. This explains why large full-width faces can now be made available. The additional width of the new display



magazine is so balanced or distributed with respect to the assembler front that delivery time of the matrices to the line is not disturbed. For convenience when operating the 72-channel magazine, the inoperative keybuttons are plainly distinguished by a red stripe on the left-hand side. The lower magazine is a standard 90-channel magazine.

The important achievement of a new and wider range of display composition from the main magazines is further enhanced by the advantage of setting a complete series of all display faces, 18, 24, 30 and 36-point all full width, without replacement of a magazine on the Model G with side magazine equipment. It is now entirely practical to run caps of large faces in one side magazine and the lower case in another side magazine.

The new distributor bar has a greatly increased rail surface for supporting the larger matrices. This feature further reduces wear on the matrix teeth. More accurate distribution of matrices is also insured because at the point of drop-off all the teeth on any matrix leave supporting rails on the bar at the same instant.

Three extra magazine channels are made available by a simple arrangement of certain reeds whereby spacing material can be drawn from the 90-channel magazine when operating the 72-channel display magazine. However, since display composition often requires considerable spacing material, such may be carried in the three usual space channels of the 72-channel magazine if desired. Otherwise extra characters can be added to the display font.

*Patent and Research Engineer, Intertype Corporation, Brooklyn, N. Y.

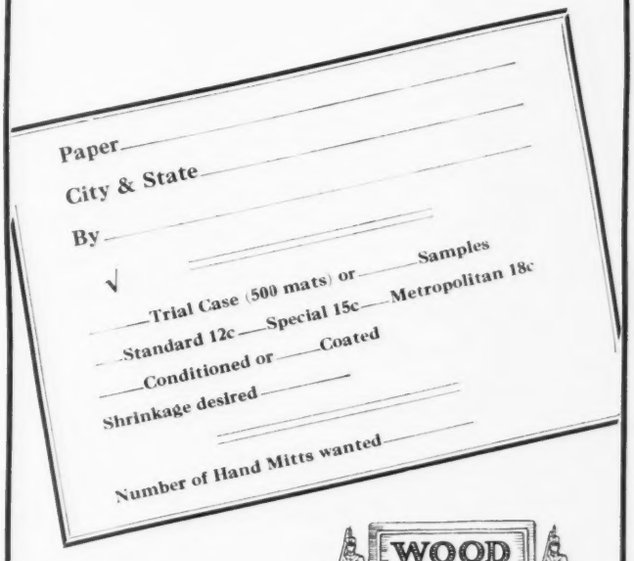
The Toronto Star Knew Dry Mats From Long Experience

WHEN the *Toronto Star* accepted our "Trial Order" proposal in April, 1925, this paper had been using dry mats for fifteen years.

Wood Dry Mats made good, and since June, 1925, this well-known Canadian daily has been using our product regularly. Experiments prove the superiority of the Wood Mat.

Regardless of the mat you may be using, our hand mitts are distributed to all free of charge.

Here's your coupon for a trial lot.



WOOD

FLONG CORPORATION
HOOSICK FALLS, N.Y.

Do You Understand Your Rollers?

(Continued from page 9)

that may even emboss the paper and will push the ink from the type or dots in the high places while the low places are barely printing.

If the rollers are firm, even though they have plenty of tack to properly distribute the ink to an even plate, they are said to be "no good." A soft, imperfect, short-lived roller will be put in and will be "just right." The pressman knows how the conditions of that emergency have been met; the rollermaker is blamed for "poor rollers" and everyone in that plant is satified for the moment.

Let us carry this same picture a step farther. These same mushy rollers are "set down" so as to contact the low spots.

How many pressmen have started their presses in the cool of the morning and after getting their color just right so as to match the proof, find that after running for a few hours, the color is "off" and in some instances the work looks a bit slurred? If only the color is "off" the fountain is readjusted to add more ink to the affected parts of the form. If the slur is present later on, the rollers are reset lighter and then it is discovered there is too much ink and it is necessary to cut it again. No matter if the press is a slow or fast one, the same thing occurs in proportion to the frictional heat created.

This goes on and on—changing color, resetting rollers and often the ink man is called in and told that his ink is not uniform. To prove his case, a can of ink may be opened and a proof pulled which will look all right. The printer will produce samples of the run to prove his side of the discussion.

What has happened? Composition rollers are not only affected by atmospheric conditions because of the hygroscopic quality of the glycerine, but when heated, they expand rapidly. Such rollers set to a light contact, even though expanding very little, increase the contact greatly. The very fact that a composition roller is cast makes it necessary to center the metal core in a mold by means of a bushing that is supposed to fit the mold and also the spindle of the core. A small amount of wear on the spindle itself or on the bushing will cause the roller to cast eccentric in the mold. The error doubles; in other words, should the error be 1/64 in., the roller will be 1/32 in. eccentric. An eccentric roller must necessarily be set down a little more than usual to make contact on both sides. As the roller revolves under contact, a flexing action takes place that in turn generates heat. Heat expands the roller and increases both the contact and the flexing, thus generating even more heat. If permitted to continue, the roller will eventually melt. Another action caused by the generation of heat takes place and that is the effect of such heat on the ink itself.

In manufacturing ink the season and room temperature together with a reasonable amount of normal frictional heat are considered. If the ink so manufactured is subjected to higher temperatures, the body, tack, etc., may be impaired. A thin film of ink such as is on a roller is very readily affected. Heat generated by rollers has become quite a problem since the introduction of high speed and multicolor presses. Check up on the heat of the rollers before you call the ink-maker.

Uniform printing calls for a roller that operates coolly and one that requires the face to give the proper distribution of ink. A gelatine face deteriorates in use because of the tanning action of ingredients in some inks that cause the composition to become brittle and either crack or become "dead." In such cases a roller with the proper distributing face must be substituted to obtain good work.

Always check carefully all new rollers for eccentricities

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and if any are found, reject them in order to avoid the difficulties mentioned above. All progressive roller manufacturers have taken steps to reduce this defect to a minimum or remove it entirely by new and improved types of rollers.

Referring again to the original difficulty it can be seen readily that the basic trouble was in the making of a suitable reproduction of an original piece of art work. Progress has been made in the electrotype field whereby better electros are available today, but there is still much to be done before the roller-maker can make a satisfactory roller with an operating life many times that being given today. From the roller-maker's point of view he is required to manufacture a roller which is not the best that can be made, but is the best that can be furnished to properly ink uneven type and plates and function on worn and uneven presses.

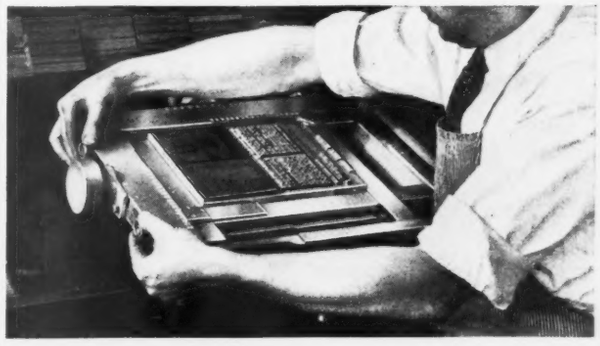
Today the printer has a selection of many different kinds of roller materials and combinations to suit his individual conditions. As these new materials are marketed, new angles of the printing problem are presented relative to the contribution rollers make to the finished product, which after all is the objective. The problem of rollers heating and the role that it plays could be best tested when a roller which would not do those things had been put on the market for comparison.

Many roller companies maintain complete development and experimental departments and a few work in conjunction with many of the laboratories of the largest manufacturers in the country. This has resulted in a complete reversal of the old sales talk that what we have is good enough. The printers who have "no time for experimenting" are unintentionally hindrances to progress. Fortunately most plants are not so inclined and have assisted in trying out new developments in a practical way. Criticisms of new ideas from these plants are now constructive and if a principle is sound, minor imperfections are no longer a sufficient reason for them to say the idea is not worth the bother.

In conclusion, there is one old discovery that can be put back in operation and for example I am going to give you the actual details of my entrance into the printing trade as an apprentice. Possibly the same condition exists in your plant, either with rollers or some other major item, but I hope not. Complete information regarding the major factors and their relation to one another should be given to every apprentice. In my case, one such factor was completely omitted.

When I was introduced to a very complicated looking piece of machinery and informed that it was a printing press I thoughtfully measured the time when I would be able to know about it and master its operation successfully. (I now find that my estimate of the time required was much too short, as the more I learned the more I came to realize how much there was to be discovered.) Nevertheless, I was instructed as to the number of places that *had* to be oiled each morning and also through the months the care and function of each part of the machine. Once I experimented in a manner different from the way instructed and things must not have turned out right as I was reprimanded in no uncertain terms.

Some time later I was instructed as to how the paper was to be handled and the effect of humidity on it in relation to register. There was instruction as to how in a crude way to test the paper to ascertain certain characteristics. The minor manipulation of inks was next given to me. The need of agitation, the trapping, crystallization, etc., was next poured into my already befogged brain. The mysteries of making and handling plates came next to add to the burden and it was here I learned how the engraver "tricked we poor printers" so that we could not possibly duplicate their progressives. (This is a large subject in itself and I have another view on this now.) Dot values, treatment on plates, lost detail and



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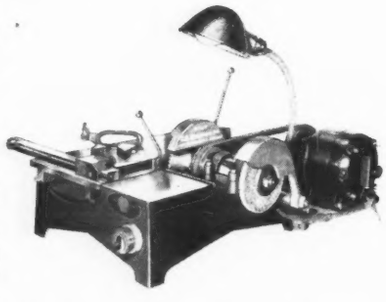

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other items, too numerous to mention, were pointed out to me.

Early in this fascinating printing game, my attention was called to rollers and I was told that I had just fifteen minutes to get them clean at closing time. That was the full lesson. I learned through experience that certain inks cracked rollers sooner than others, that in hot weather they ran soft, and if not reset might melt. I learned after some time that by pushing my finger nearly to the core I thought I could tell how a roller would distribute ink during any kind of temperature or relative humidity. Later I was surprised to see a roller function perfectly that was firm enough to resist the pressure of my finger thrust. For several years the total amount of my information was that rollers were a necessary evil and certain troubles became so regular that should anyone ask if I had any roller trouble I would say, "No," meaning, of course, no more than I had always expected.

Presses progressed, paper making progressed, ink manufacturers created new inks, special treatments of plates were developed for multicolor work but the roller used was quite similar to those used before the development of high-speed and multicolor presses. With the marketing of those types of presses the roller problem became acute both as to production and speed.

Today most roller companies have really gone to work and have in their line of products many different types of rollers built to overcome previous difficulties and meet the special requirements that are too numerous to itemize. The roller industry today is undergoing the most radical change since the inception of the cylindrical roller which was first made over one hundred years ago.

It is urged that all printers remember that the success of any material given to them to work with will be successful only when the skilled pressman applies his knowledge to the manipulation of that material. An automobile will not function no matter how perfect it is unless it is oiled, gasoline put in the tank, battery kept in order, and steered by the driver. It is the same with new discoveries. Don't be too eager to condemn them just because someone has tried to make them operate without exercising the knowledge he has at hand.

Mono Rule and Dry Mat

(Continued from page 11)

a 3-point body. It is used in the paper as an ad cut-off rule.

Another radical departure was to turn down the piston compression spring nut well over an inch from the top of the rod. Here we had the unusual combination of all new casting parts under heavy spring compression.

What might be expected from all this didn't happen, *i. e.*, excessive mold hang-ups. After all, given a good mold in perfect line, probably the greatest cause of mold hang-ups are worn closure blades and guide plates. When these are worn, metal will gradually work in under the mold and seriously interfere with the flow of oil, hence, the hang-ups.

We did slow the machine down to 80 r.p.m. and used a full 1-inch stroke. As always we are using the Monotype Co.'s rule mold oil. The mold completed a long run in which all the old rule was replaced with gratifying results.

From all this we found that the intensive drive of metal was giving a very compact rule with a splendid weld from top to bottom and an excellent face without

the usual weak spot directly over the weld. This rule can be twisted and doubled without breaking and best of all it is standing the test in the dry mat molding process, so much that our good friend, the stereotyping foreman, came over to our department to extend his congratulations.

From this experience we have learned that worn parts have no place on casting machines. The depression has contributed toward much of that sort of economy, but depression or no depression, the best economy is to keep the equipment up to a high standard.

Controlled Maintenance

(Continued from page 14)

report. This eliminates "passing the buck" by the operator to the machinist and also helps the machinist keep a closer check on the condition of the machines. The reports that are turned in by the day crew are turned over to the night machinists and the ones turned in by the night operators are turned over to the day machinists.

We have filled up the space between the floor and the bottom of the base of the machines with concrete so that mats which are dropped on the floor cannot get under the machines. We are also filling up the lower case, figure and point channels of news machine magazines so that a glance in the magazine entrance will determine instantly if there are any mats missing. We have tried this out on several machines are so thoroughly sold on the idea that we are going to completely fill all the news magazines.

We may do more bookkeeping in our machinist room than most plants but we have found that we can buy lead pencils cheaper than we can buy tools and machine parts. We also find that the lead pencils take the place of tools in a great many instances if properly used. We have eliminated the guess work and "trust-to-memory" ideas and know "where we are at" regarding machine upkeep, cost and operation. The system not only saves money and increases efficiency but is more satisfactory to all concerned.

Books Received

"The Printer and the Future," a hard-bound, 24-page booklet, written by L. W. Claybourn, contains a warning to those letterpress printers who are inclined to ignore the rapid rise of competitive printing processes. The writer asserts that the future of letterpress printing is secure. However, printers should adopt methods, processes and equipment which have been designed to improve letterpress work by eliminating the old "rule of thumb" procedure. Inaccurate methods which are tolerated in letterpress printing today are illogical and uneconomical phases of procedure. In almost every industry in the country obsolete standards of practice are not being tolerated. The problem of the letterpress printer in selling at a profit will become an increasingly more serious and more difficult problem. In order to offset this condition there must be changes in present letterpress printing practices, but these changes are not alarming from a financial standpoint.

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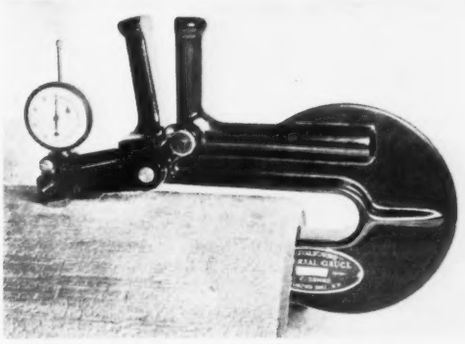

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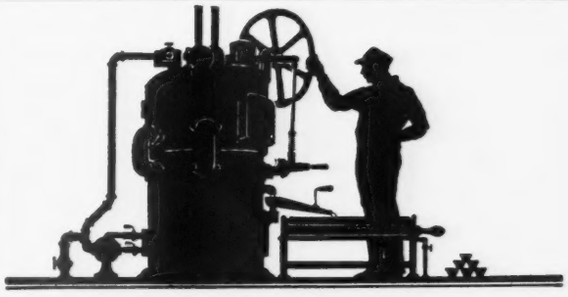

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Three Speeds Ahead!—Bulletin describing several composing room saw-trimmers and accessories, also a radial router for routing, planing and mortising cuts and bases.

For Precision Plates—Bulletin describing and illustrating machine for etching by electrolysis. The process eliminates acid in the engraving process.

Typefaces in Newspaper Advertising (N-8)—Newspaper page size folder in stout jacket showing by practical examples the effects which may be obtained from the use of various type faces made by the manufacturer.

Everyday Problems of the Type Metal User and Their Solutions—A 32-page booklet containing detailed technical information relative to metal difficulties on line-casting and individual type-casting machines in the composing room, the stereotype department and the pressroom. General information on metal remelting methods is also given.

The Still Further Improved Ludlow—Elaborately illustrated broadside describing the improvements which have been made recently in Ludlow mechanism and equipment.

Specimen Booklet—Demonstrating uses and showing various sizes of Metropolis and Metropolis Bold with extra long ascenders. Printed in black and red.

The Meyer Both Perfected Casting Box—Bulletin illustrating and describing 5-column full newspaper depth Model B stereotype casting box and Model A, 5-column by 16 in., each equipped with electric heating unit.

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Photo and Offset Lithography

(Continued from page 8)

form being inked up between each impression that is transferred to the rubber blanket. The result is a perfect inked impression on the blanket.

A sheet of photographic film, either Agfa Printon, Kodalith or Polygraphic, is taken from its package and it immediately becomes light-struck, and turns a white color. A sheet of thin cardboard and a thin sheet of zinc are placed on top of the form, and narrow strips of the same materials are placed on the bearers on each side of the offset proofing press. This is to make the impression even and not too heavy. The impression is then pulled on the film side, and the impression is thus transferred from the offset blanket to the photographic film. Then, instead of placing it in the developing solution, it is placed in the hypo for a few moments. When it is taken out it will have all the type and halftone dots sharply outlined on a surface of translucent celluloid. In order to add to the opacity of the type and halftone dots, it is dusted over with a mixture of lamp black and graphite. After drying it is gone over with a piece of cotton, to clean off any surplus specks of the lamp black and graphite. A small piece of cotton cloth, saturated with a litho varnish, is then rubbed over it and dried. You now have a perfect positive for photographing directly upon the sensitized press plate. This press plate sensitizer is the same formula mentioned in this department, in the August issue.

If there are more than one page to be reproduced, say four or eight, take a sheet of orange colored paper (for opaqueness) and lay out your form on it, marking the exact position for each page. Tip each positive in its proper place with ordinary gummed tape, and when the form is completed, turn it over and with a safety razor blade, cut out the orange paper behind each positive. You now have a form, each positive in proper position, and ready to be placed on top of the sensitized press plate in the vacuum printing frame.

After the proper exposure has been made, the printing press plate is taken out and rubbed over with a developing solution known as *Nowok*. After this solution has been rubbed in thoroughly with a piece of cheese cloth, it is fanned dry and placed in the developing trough in a weak solution of lye and water. It is first rubbed over gently with a piece of cotton, and finally with a stiff brush to eliminate all traces of glue from the non-printing part of the plate. Any trace of glue left on the plate will have a tendency to make the plate sum in printing. The plate is then treated in the usual manner and is ready for the press. A plate made in this way should be good for 80,000 and more impressions.

Opens Los Angeles Branch

The Linotype Parts Corporation has established an agency in Los Angeles, Cal. Hugh Foster, who has been associated with the Corporation for a number of years, will be manager of the new branch. A full line of parts will be carried by the new agency for the convenience of the Pacific Coast trade.

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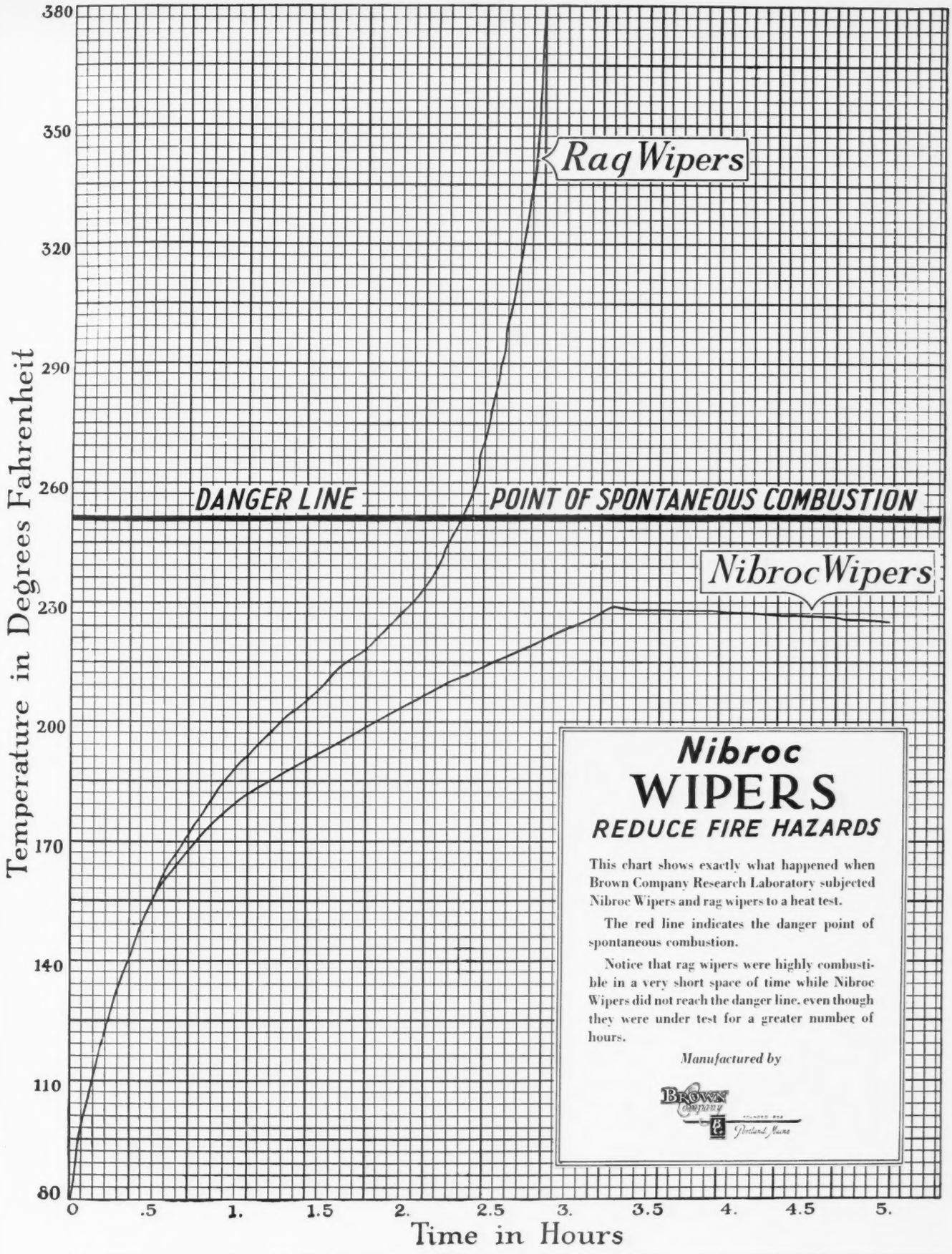

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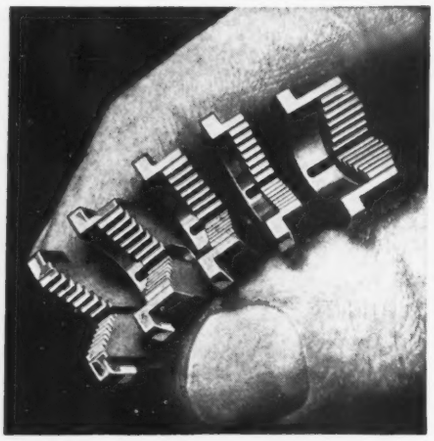

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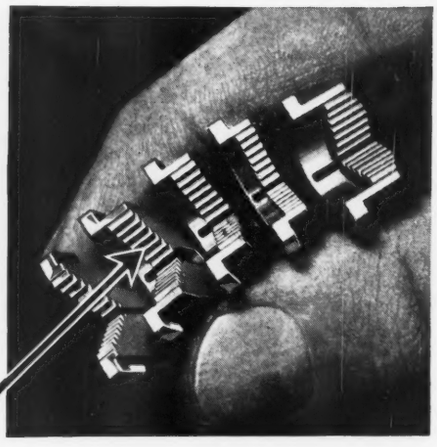

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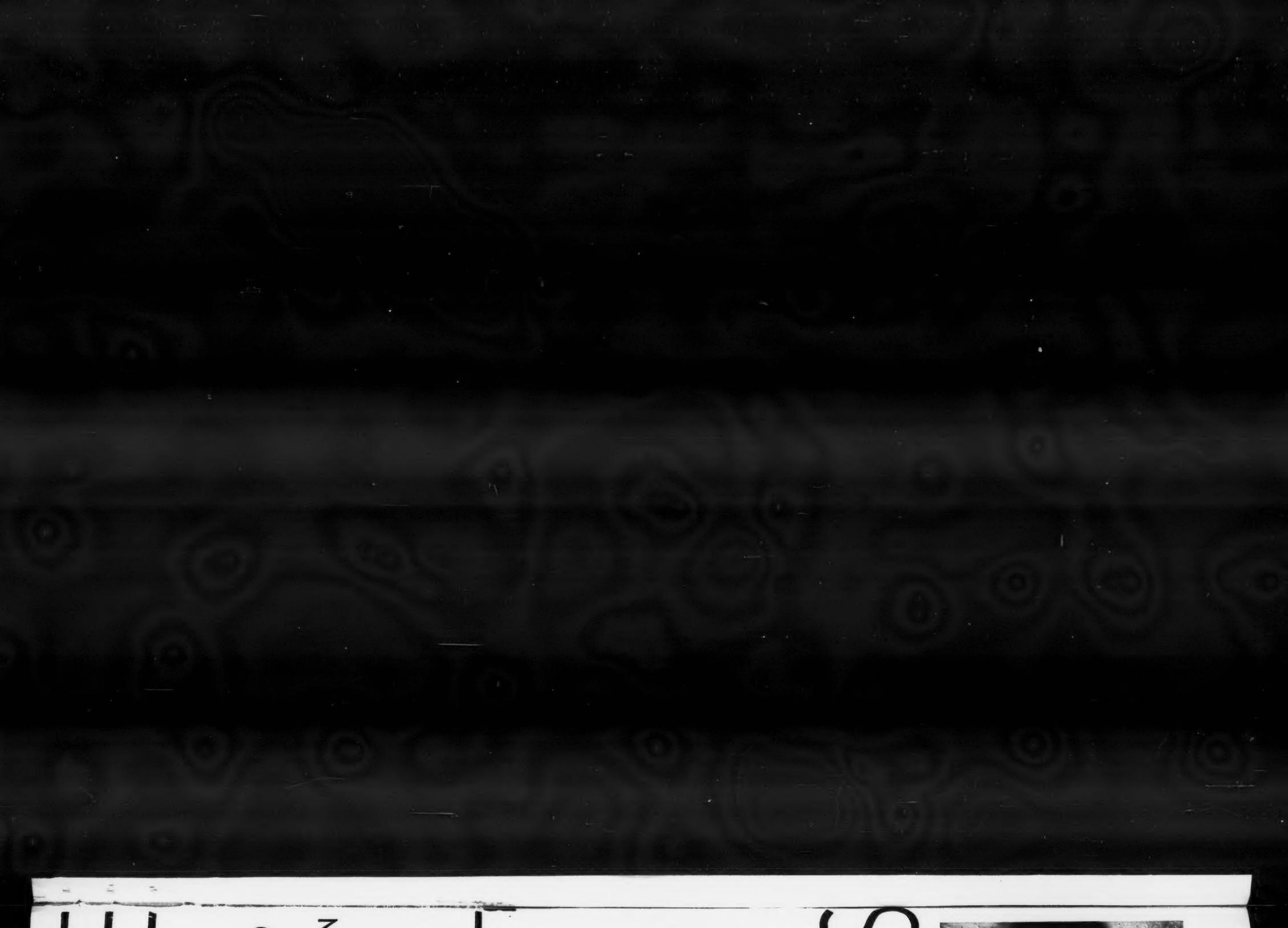
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